CCD-V5000
RMT-500

SERVICE MANUAL

US Model
Canadian Model
E Model

Hi8 PRO

U MECHANISM

For MECHANISM ADJUSTMENTS, refer to the "8 mm Video MECHANICAL ADJUSTMENT MANUAL Ⅲ" (9-972-732-11).

SPECIFICATIONS

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Standard: Rotary head, FM system (2 channels) PCM: PCM system (2 channels)
Video signal	NTSC color, EIA standards
Usable cassette	8 mm video format cassette
Tape speed	SP: Approx. 1.43 cm/sec. LP: Approx. 0.72 cm/sec. (playback only)
Recording time	SP mode: 2 hours (E6/P6 – 120)
Playback time	SP mode: 2 hours LP mode: 4 hours (E6/P6 – 120)
Fast forward/rewind time	Approx. 7 min. (E6/P6 – 120)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (black and white)
Lens	Combined 8 × power zoom lens f = 11 – 88 mm, F1.4 with macro Filter diameter: 52 mm
Auto focus system	TTL
Color temperature	Auto: One push white balance INDOOR 3,200 K OUTDOOR 5,800 K
Minimum illumination	2 lux (F1.4)
Illumination range	2 lux – 100,000 lux (0.2 – 9,294 footcandles)
Recommended illumination	More than 100 lux (9.3 footcandles)
Aperture correction	Automatic, manual (variable)

PCM

Sampling frequency	31.5 kHz
Audio frequency	20 Hz – 15 kHz
Dynamic range	More than 85 dB
Wow and flutter	Less than 0.005% RMS

Input and output connector

Video output	Phono jack, 1 Vp-p, 75 ohms unbalanced, sync negative

– Continued on next page –

- **SERVICE OF REMOTE COMMANDER RMT-500**

Remote commander RMT-500 is available as a unit. But as individual parts the battery case lid of commander is only avaiable.

MICROFILM

8 VIDEO CAMERA RECORDER

SONY®

S video output	4-pin mini-DIN Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.286 Vp-p, 75 ohms, unbalanced
Audio output	Phonos jacks (3: stereo L, R and monaural), −7.5 dBs, at output impedance less than 2.2 kilohms
RFU DC OUT	Special minijack, 5V DC
Video input	Phono jack (1), 1 Vp-p, 75 ohms, unbalanced, sync negative
S video input	4-pin mini-DIN Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.286 Vp-p, 75 ohms, unbalanced
Audio input	Phono jacks (2: stereo L and R), −7.5 dBs, input impedance more than 47 kilohms
Headphones jack	Stereo minijack, 8-ohm impedance
Remote jack	Stereo mini-minijack
Microphone jacks	External microphone jacks: phone jack, −66 dBs low impedance External narration microphone jack: minijack, −66 dBs low impedance

General

Power requirements	Battery compartment 6.0 V (battery pack)/7.5 V (AC power adaptor)
Power consumption	12 W (camera recording, DIGITAL EFFECT switch "ON") including the viewfinder
Installation	Vertically, horizontally
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Dimensions	Approx. 190 × 235 × 430 mm (w/h/d) ($7\frac{1}{2} \times 9\frac{3}{8} \times 17$ in.) Including the lens hood
Weight	Approx. 3 kg (6 lbs 10 oz) excluding the battery and cassette
Microphone	Electret condenser microphone × 2 uni-directional stereo type
Narration microphone	Electret condenser microphone, non-directional monaural type
Accessories supplied	• Wireless Remote Commander (1) • Size AA batteries (IEC designation R6) (2) • Stereo earphone (1) • Battery pack NP-77H (1) • AC power adaptor AC-V50 (1) • Lithium battery CR2025 (1) • Cassette tape (1) • Shoulder strap (1) • Jack covers (1 set) • Lens cap (1) • Card cleaner (1) • RFU adaptor RFU-90UC (1) • A/V connecting cord (3 phono to 3 phono) (1) • Video cable with S video connectors (4-pin mini-DIN to 4-pin mini-DIN) (1)

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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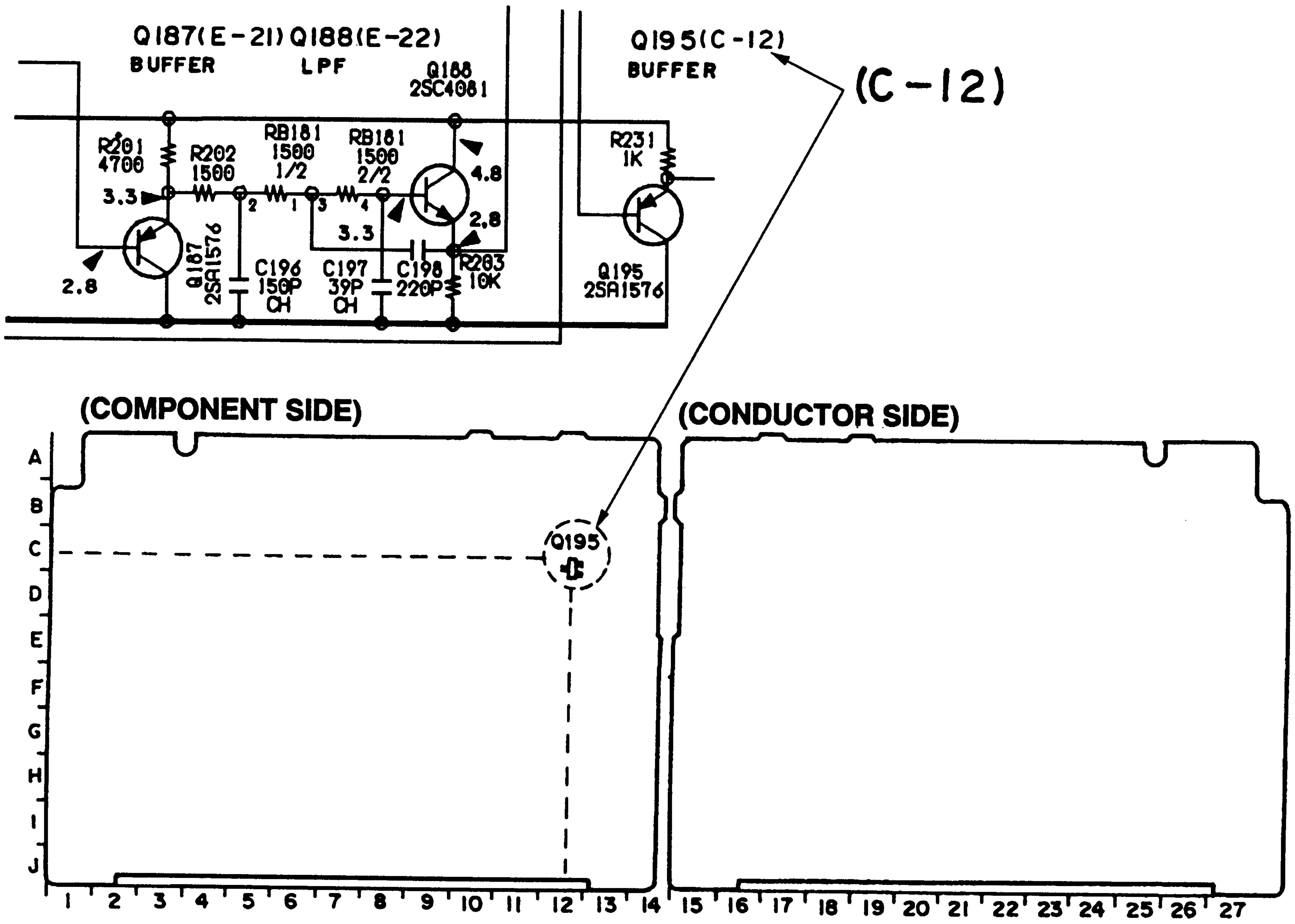
There is the color reproduction standard frame at the back of the book.

SERVICE NOTE

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red sa shown below. This enables to find the location on the board easily when servicing.



Q187(E-21)
Q188(E-22)
BUFFER
LPF
Q188
2SC4081
Q195(C-12)
BUFFER
(C-12)
R201 4700
R202 1500
RB181 1500 1/2
RB181 1500 2/2
3.3
4.8
2.8
3.3
2.8
Q187 2SA1576
C196 150P CH
C197 39P CH
C198 220P
R203 10K
R231 1K
Q195 2SA1576
(COMPONENT SIDE)
(CONDUCTOR SIDE)
Q195
A
B
C
D
E
F
G
H
I
J
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[SERVICE MODE]

In this instrument service mode is provided in orders to know the set satus and for the electric adjustment of camera.
This operation in made by full adjustment remote controller (J-6082-053-A).

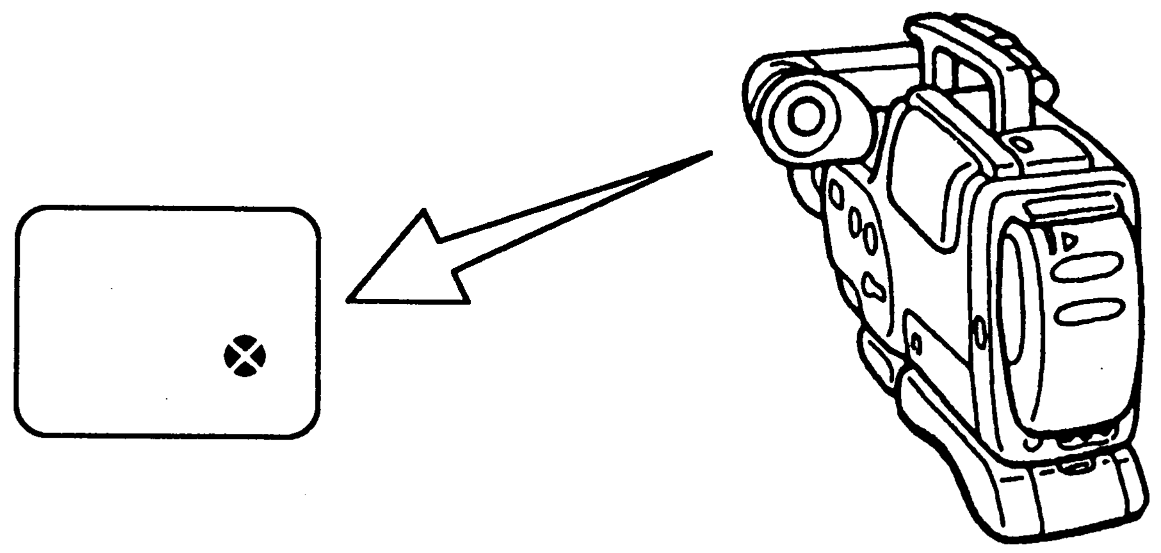
- For adjustment of EVR (Electronic Variable Resistor) of camera.
  ......SDJUST MODE → Refer to page 291.
  (7-1-4. Adjustment Remote Controller)
- For checking the set status
  ......STATUS INDICATION MODE
  (STATUS MODE) → Refer toPAGE 328.
  (9-1-8. Service Mode)

[CHECK FOR HEAD CLOGS AND REMEDY]

After an extended period of use the video image may become indistinct or may not appear at all during playback of a tape. The cause of this usually are dirty video heads. For remedy, cleaning of the heads is required.

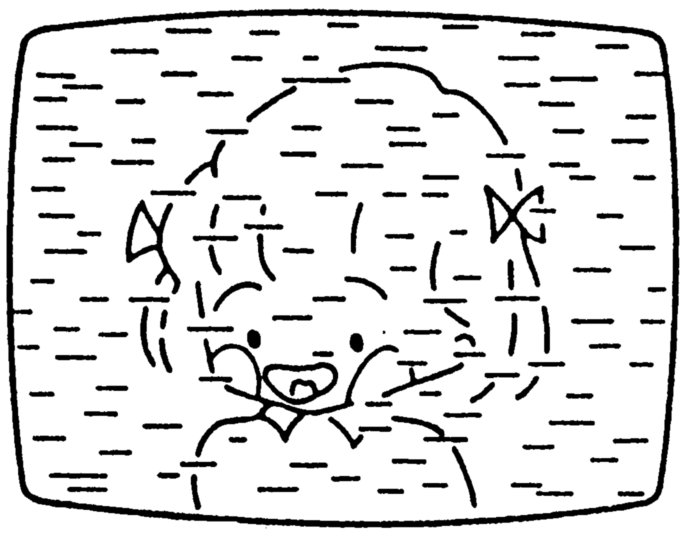
Check for Head Clogs During Recording

① Use a blank tape, record a short section, then press the stop button to stop.
② Set to recording mode again.
③ If the [⊗] mark is flashing in the viewfinder at this time, head clogs are occurred.

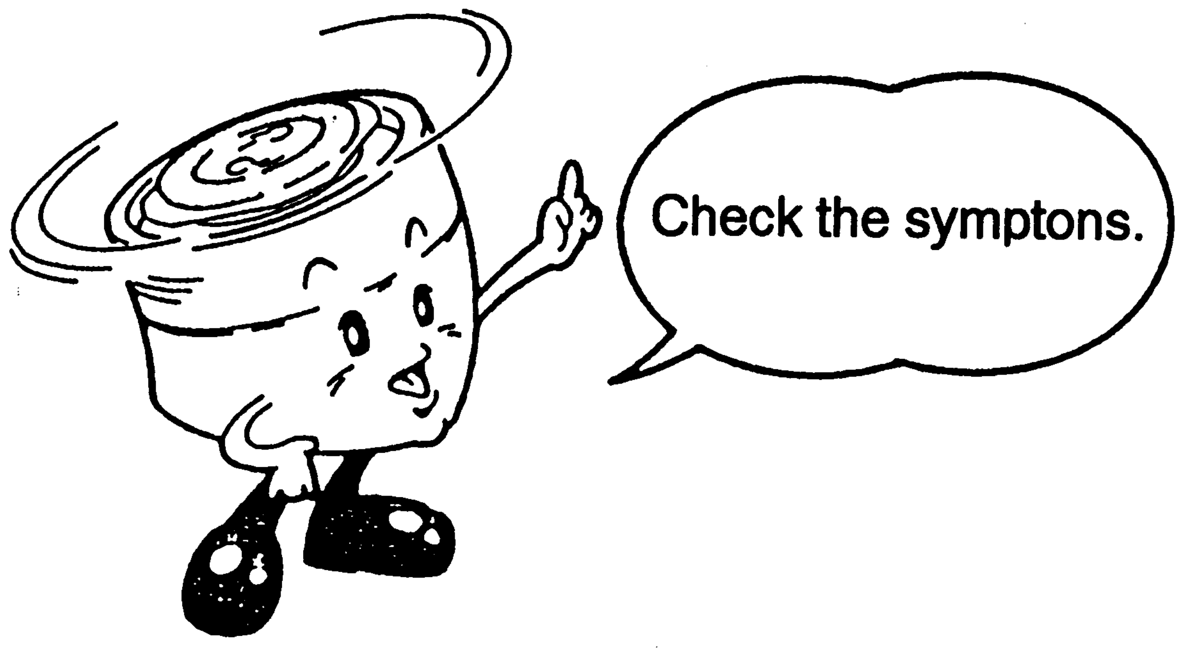


Check During Playback of a Tape

① Play back a pre-recorded tape and display the image on a TV screen.
② If there is no sound and the image is unstable, no image appears on the screen, or tape transport is unstable, head clogs are occurred.



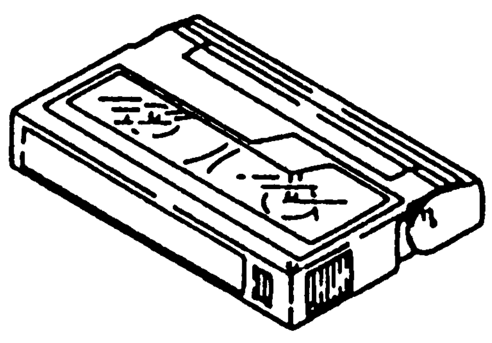
The state the image flickers
by niose on the screen.


Check the symptons.

Remedy

[Cleaning method using a cleaning tape]

- Use the Cleaning Tape for Hi8. (Please follow the instructions attached to the cleaning tape.)



SECTION 1
GENERAL

This section is extracted from instruction manual.

Technical Information

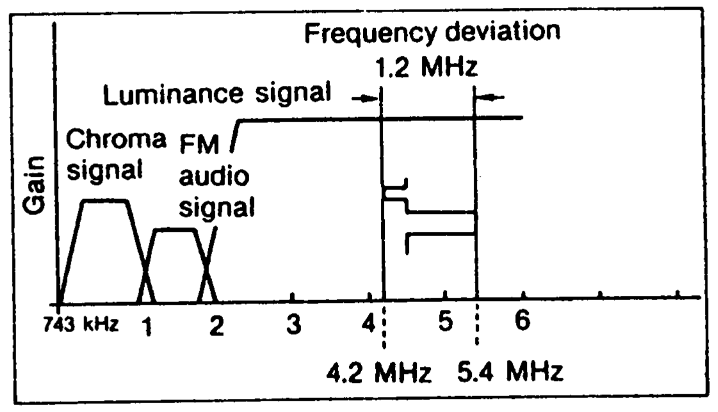
Hi8 (High Eight) Video System

The 8 mm video system employs a metal powder tape. This means the video camera recorder is capable of recording a large amount of information and enhances picture quality. Taking advantage of the 8 mm video system, the Hi8 video system has been developed. The main characteristics of the Hi8 video system are as follows:

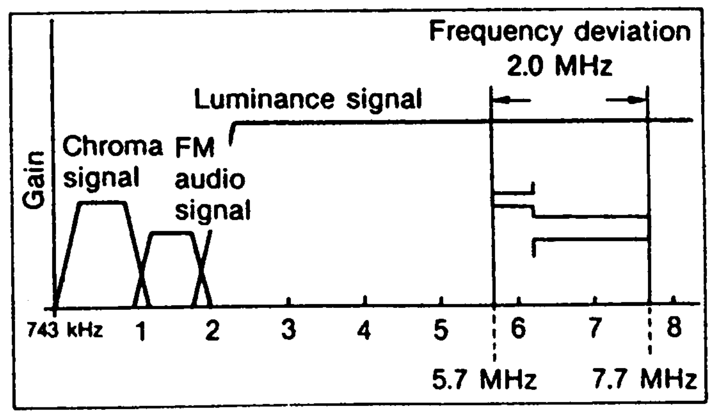
Super High Quality Picture

The information capacity is a key element for picture improvement. It can be increased by shifting up the FM carrier frequency range. In the Hi8 video system, the FM carrier frequency range of the luminance signal is shifted up to 5.7–7.7 MHz. This is higher than the 4.2–5.4 MHz range of the standard 8 mm video system. Thanks to this, the horizontal resolution is improved to more than 400 lines.

Frequency allocation of the standard 8 mm video system



Frequency allocation of the Hi8 video system



Technical Information

Compatibility with Conventional Video Camera Recorders

A high-quality picture can be recorded and played back on a tape for the Hi8 video system.

Recording with this unit

Hi8 tape

Hi8 mode switch to AUTO ➡ Tape recorded in the Hi8 video system

Hi8 mode switch to OFF ➡ Tape recorded in the standard 8mm video system

Standard 8 mm tape

Regardless of the position of the Hi8 mode switch ➡ The recorded in the standard 8mm video system

Playback with this unit

Tape recorded in the Hi8 video system

Tape recorded in the standard 8 mm video system

➡ The recording mode is selected automatically

- A tape recorded in the Hi8 video system cannot be played back with an conventional 8mm video camera recorder.
- A standard 8mm tape cannot be recorded in the Hi8 video system.
- A tape for the Hi8 video system cannot be recorded and played back in the Hi8 video system with a conventional video camera recorder.
- The recording tape speeds in the Hi8 video system are compatible with the conventional 8 mm format.
  Recording/playback time is 2 hours using a E6-120/P6-120 tape or the equivalent.

Cassette used	With this unit		
	Recording		Playback
	Hi8	Normal	
Standard 8 mm tape	No	Yes	Yes
Hi8 tape	Yes	Yes	Yes

Technical Information

Hi-Fi Stereo System

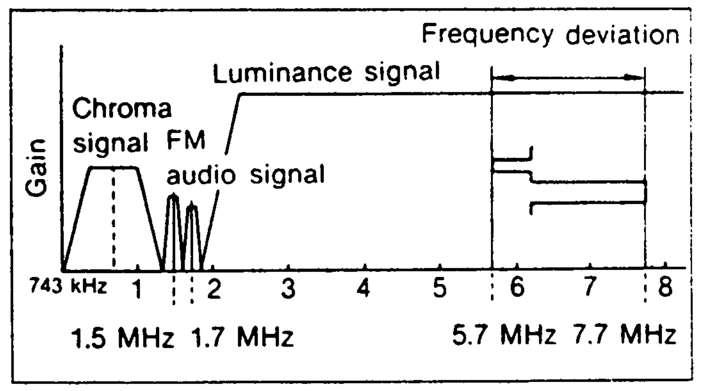
On the 8mm video standard track the sound is recorded/played back in AFM hi-fi monaural. The PCM digital stereo sound is recorded/played back on the PCM track as an option.

On this unit, in addition to PCM digital stereo sound, the AFM hi-fi stereo sound can be recorded on the standard track.

To maintain compatibility with the conventional AFM hi-fi monaural sound, the AFM hi-fi stereo sound is recorded as the L−R sound using the 1.7 MHz carrier and the L+R sound using the 1.5 MHz carrier as the FM audio signal.

To play back the tape recorded by its hi-fi stereo system, this unit uses a matrix circuit to produce the L and R stereo sounds separately. When a conventional AFM hi-fi monaural system model is used to play back a tape recorded in AFM hi-fi stereo, it will produce the L+R monaural sound because the monaural model can reproduce only the 1.5 MHz carrier. The AFM hi-fi stereo system of this unit allows you to enjoy a live stereo sound atmosphere even with the standard track.

Frequency allocation of the hi-fi stereo system



Compatibility with conventional 8mm video format

When you play back an AFM stereo hi-fi recorded tape with a conventional 8 mm video equipment, a sound is reproduced in monaural.

Technical Information

TBC (Time Base Corrector)

During playback, the TBC is automatically turned on to reduce jitter and further enhance the high quality of the picture recorded in the Hi8 video system.

On Jitter

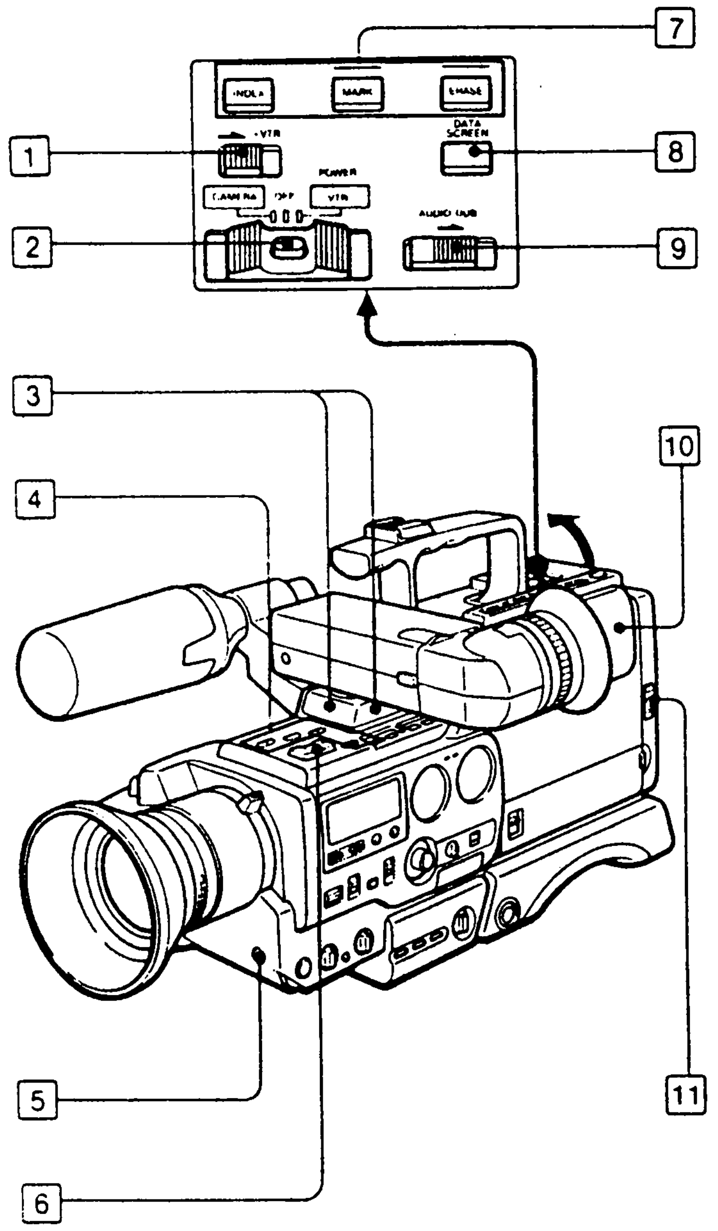
A signal recorded on the tape is demodulated to its original video signal through the rotating magnetic head. During this process, time base fluctuations due to uneven rotation of the head and varying tape running speed are added to the demodulated video signal. These time base fluctuations that occur with video equipment are called jitter. As long as the monitor can scan the fluctuation, no effect is produced on the image. However, when the jitter exceeds a certain limit, the image becomes unstable and a swaying motion or bend is produced on the monitor. For the Hi8 video system, particularly with its more than 400 lines of horizontal resolution and precise reproduction of the fine vertical lines, eliminating jitter will contribute greatly to further enhancing the picture quality.

Basic Principles of TBC

The write clock based on the synchronized signal (H, V) separated from the video signal temporarily writes the video signal with jitter to the field memory which the digital TBC uses. The stable read clock reads the signal data one by one in the order in which they were written in memory, and produces the video signal output without the jitter.

When you repeat editing over and over, jitter accumulates and might corrupt the synchronized signal, thus causing the image to bend. The digital TBC with its field memory produces the synchronized signal output separately from the video signal after rewriting it into a stable one. Therefore, if you use this unit as the playback machine during editing for the purpose of reducing jitter, it will be effective in removing the image bend that occurs due to corruption of the synchronized signal. The TBC also reduces jitter caused by incompatibility (jitter which occurs when the recording machine and playback machine are of a different make). This unit is therefore highly suitable for use as the master unit.

A-1



Location and Function of Parts and Controls

For details on the use of each control, refer to the pages indicated in the circle.

A-1

1 **+ VTR switch** (120), (116)
During recording, to operate the buttons for the VCR, slide in the direction of the arrow.

2 **POWER switch**
CAMERA: For camera recording
VTR: For playing back or editing tapes
OFF: Power off

3 **Remote control detector** ㊱

4 **Digital picture buttons** (136)
Press to make the digital pictures.
DIGITAL ZOOM button
P in S button
FADER/OVERLAP button
PICTURE button

5 **INDEX MARK button** (88)
Press to mark the index signal **during recording.**

6 **EDITSEARCH button** (72), (76), (122)

7 **INDEX buttons** (164)
INDEX: Press to search the index signal marked.
MARK: Press to mark the index signal.
ERASE: Press to clear the index signal.

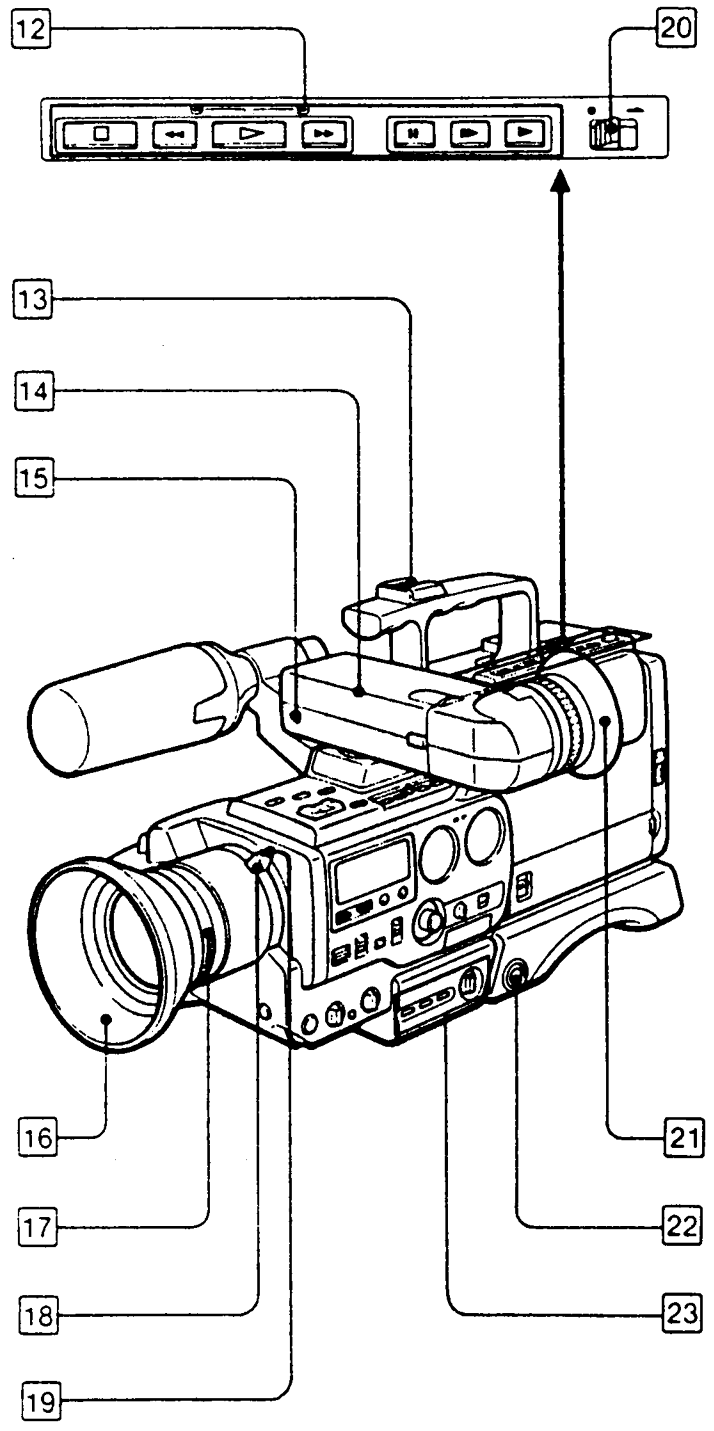
8 **DATA SCREEN button** (160)
Press to display the indication on the viewfinder screen on the TV.

9 **AUDIO DUB (dubbing) button** (184)
Slide to dub the audio signals.

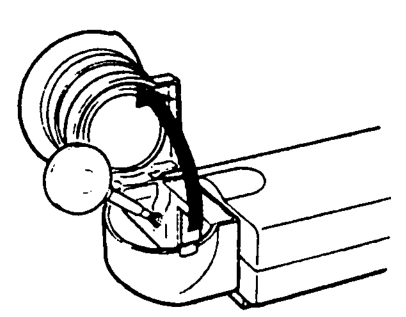
10 **Speaker** (74)
During recording or playback, the monaural sound will be monitored.

11 **BATT (battery eject) knob** ㊷

A-2



A-3



Location and Function of Parts and Controls

A-2

12 **Tape transport buttons**
□ (stop), ◀◀ REW (rewind), ▷ (playback),
▶▶ FF (fast forward), ❚❚ (pause),
❚❚▶ FRAME (frame-by-frame playback),
❚▶ SLOW (slow speed playback)

13 **Accessory shoe**
Attach a video light, etc.

14 **Viewfinder**
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution indicators and function mode are displayed on the viewfinder screen.

15 **Camera recording/battery/tape end lamp**
Lights during camera recording. It blinks when the battery is exhausted or the tape is at its end.

16 **Lens hood**

17 **Focus ring** (92)

18 **Zoom lever** (108)

19 **Macro set button** (110)

20 **● REC (recording) switch**
Slide in the direction of the arrow.

21 **Eyecup**

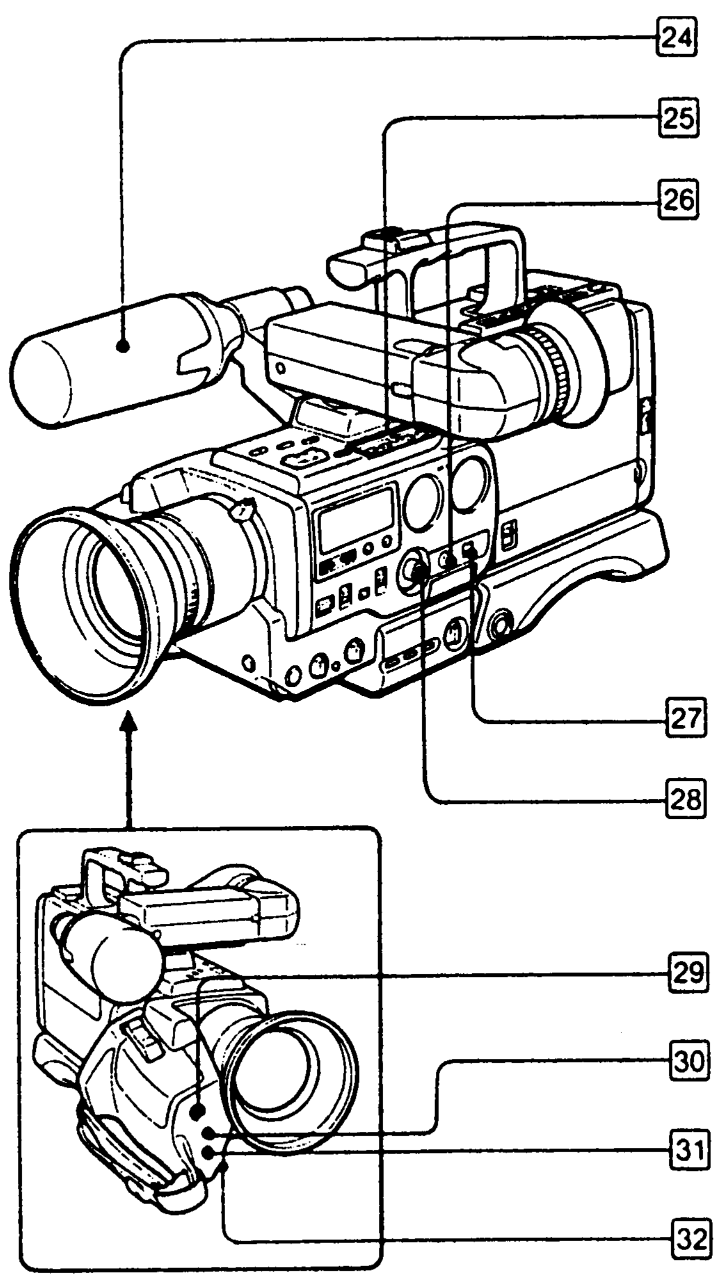
22 **PUSH SLIDE button** (64)
While pressing this button, adjust the position of the shoulder mount.

23 **Digital picture buttons** (136)
Press to make the digital pictures.
STROBE button
SOLARIZATION button
NR (noise reduction) button
EFFECT LEVEL control

A-3

To remove dust from inside the viewfinder
Open the eyecup and remove the dust with a blower.

A-4



Location and Function of Parts and Controls

A-4

24 **One point stereo microphone**
Select the appropriate function according to the shooting conditions.

25 **SUPERIMPOSE buttons** (126)
Used to record the title.
TITLE 1 button
TITLE 2 button
MEMORY button
COLOR/MODE button

26 **BALANCE control** (85)
The left/right channel balance of the microphone or input signal from the AUDIO INPUT jack can be adjusted.

27 **MIC switch** (85), (184)
AUTO: Normally set to this position.
MANU: Set to adjust the volume or left/right channel balance of the microphone or input signal from the AUDIO INPUT jack.

28 **REC LEVEL control** (86)
The volume of the microphone or input signal from the AUDIO INPUT jack can be adjusted.
Normally set to the green position.

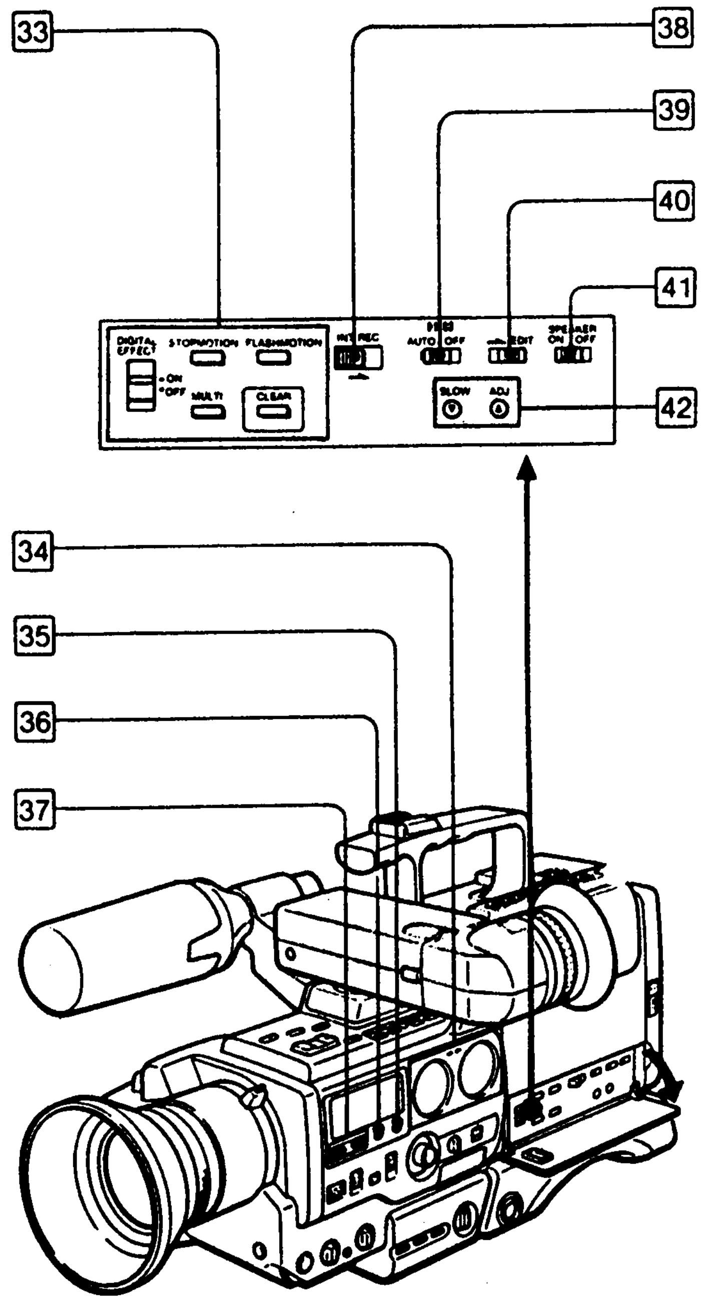
29 **START/STOP button** (66)
Used for low position recording.

30 **NAR. MIC (narration microphone) jack (mini jack)** (84)
Connect an external narration microphone.

31 **PHONES jack (stereo mini jack)** (84)
Connect the supplied earphone.

32 **PHONE LEVEL control** (72)
During playback, the sound level of the speaker or connected ear receiver can be adjusted.

A-5



Location and Function of Parts and Controls

A-5

33 **Digital picture buttons** (136)
Press to make the digital pictures.
DIGITAL EFFECT switch
STOPMOTION button
FLASHMOTION button
MULTI button
CLEAR button

34 **LEVEL METERs and indicator** (86)

35 **ZERO MEM (zero memory) button** (176)
Used to memorize the counter zero point.

36 **COUNTER RESET button** (176)
Press to reset the counter to zero.

37 **DATE and TIME buttons** (112)
Press to display or turn off the date or time.

38 **INT. REC (interval recording) button** (118)
Slide to activate the automatic interval recording function.
The picture can be recorded for approximately one second every one minute.

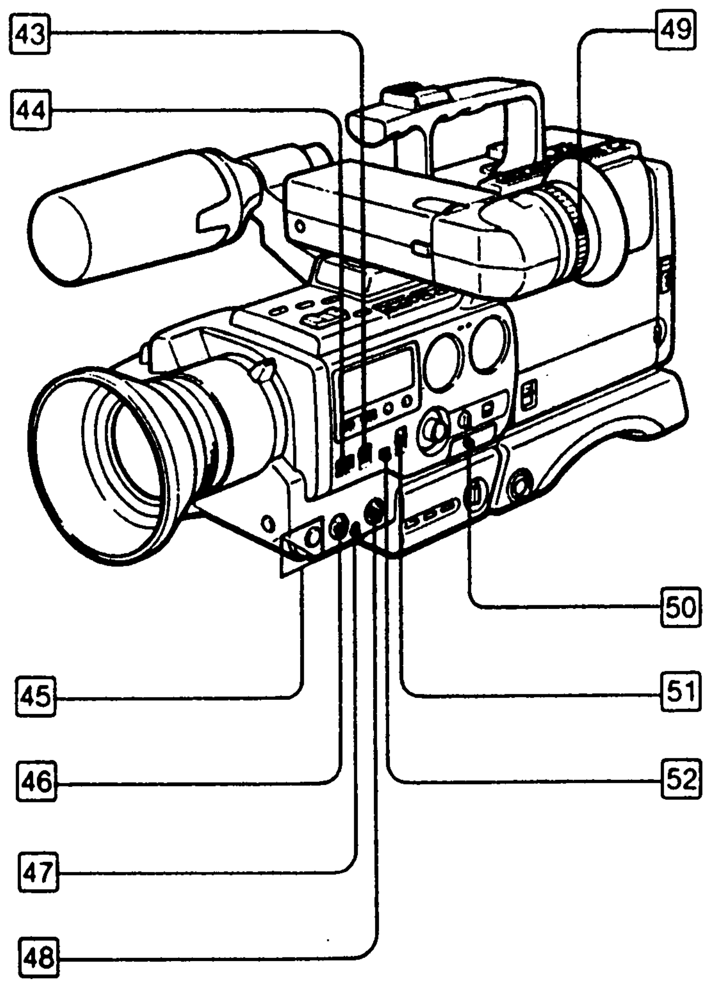
39 **Hi8 (high eight) mode switch** (66)
When set to the AUTO (green mark) position, the recording mode will be selected automatically according to the tape to be used.

40 **EDIT switch** (180)
Normally set it to the OFF position. When editing tapes, set in the direction of the arrow (ON).

41 **SPEAKER switch** (75)
During recording or playback, set to ON to monitor the sound.

42 **SLOW ADJ (adjustment) buttons** (150)

A-6



Location and Function of Parts and Controls

A-6

43 **FOCUS switch (92)**
Used for manual focusing.

44 **AUTO LOCK switch (58), (66)**
Normally set to the upper AUTO LOCK position (green mark).
To adjust the focus, white balance, iris, sensitivity or shutter speed manually, set to the lower position (white mark).

45 **IRIS control (100)**
Normally set to the center position (green mark).

46 **WHT BAL (white balance) control (98)**
Used for manual white balance adjustment.

47 **(one push white balance) button (98)**
Press to adjust the white balance presicely.

48 **SHUTTER SPEED button (104)**
Used to select the shutter speed.

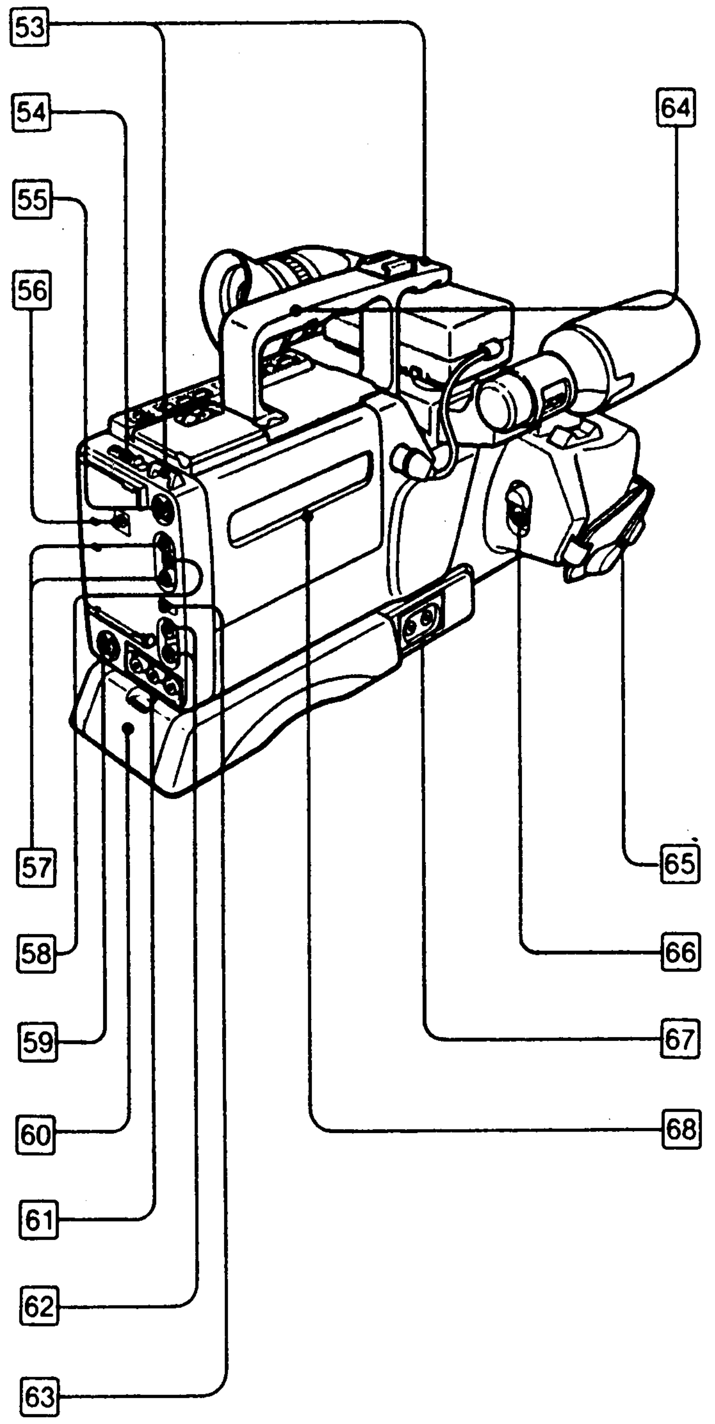
49 **Viewfinder lens adjustment ring (56)**
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.

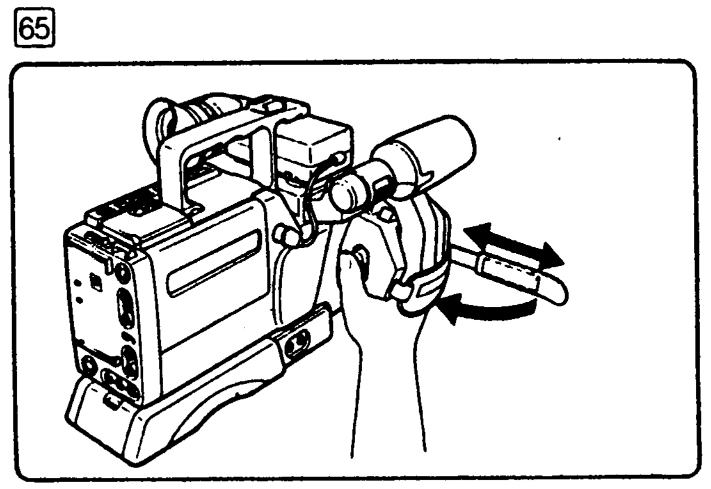
50 **NARRATION MIC button (92)**
Press to record your narration. When the PUSH mark is pressed, the microphone will be out.

51 **SENS (sensitivity) switch (102)**
Set to HIGH or S-HIGH when the scene to be recorded is too dark.

52 **PUSH AUTO button (95)**
While recording with manual focusing, to set the unit into automatic focusing momentarily, press this button.

A-7





Location and Function of Parts and Controls

A-7

53 **Hooks for shoulder strap (33)**
Attach a shoulder strap.

54 **EJECT (Cassette eject) button (53)**

55 **S VIDEO OUTPUT connector (4-pin mini-DIN) (154), (174)**

56 **DC IN connector**

57 **VIDEO/AUDIO OUT (output) jacks (phono jacks) (174)**

58 **RFU DC OUT (RFU adaptor DC output) jack (special minijack) (152), (172)**
Supplies power to the RFU adaptor.

59 **S VIDEO INPUT connector (4-pin mini-DIN) (172), (174)**

60 **Utility compartment**
Insert the earphone, etc.

61 **VIDEO/AUDIO INPUT jacks (phono jacks) (172), (174)**

62 **AUDIO OUTPUT jacks (phono jacks) (152), (172)**

63 **AUDIO MONITOR switch (152)**
Selects the sound to be monitored during playback.

64 **Carring handle**

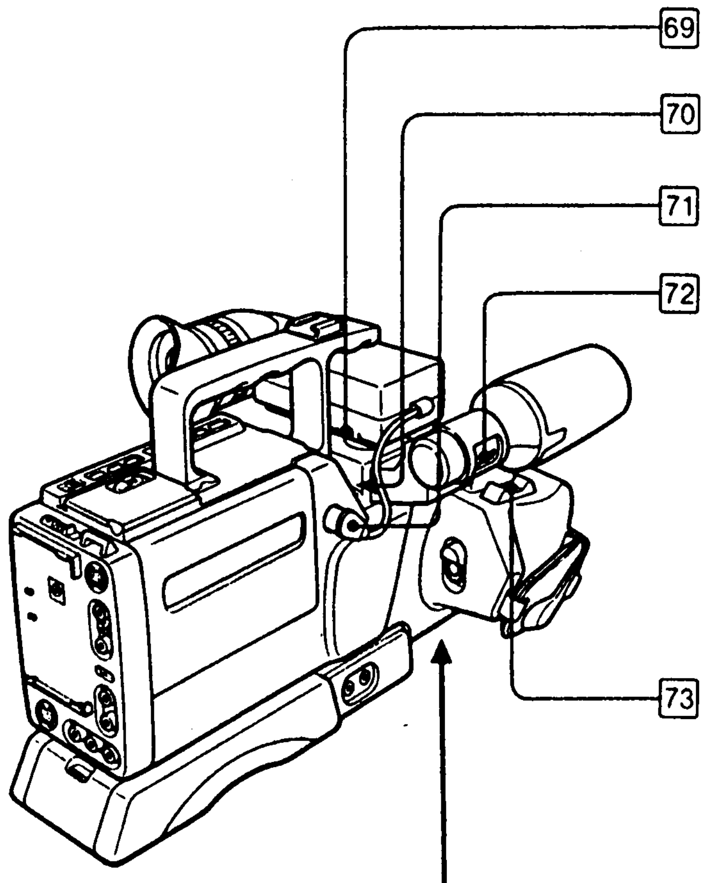
65 **Grip strap**
Adjust the length so that your thumb can easily manipulate the START/STOP button.

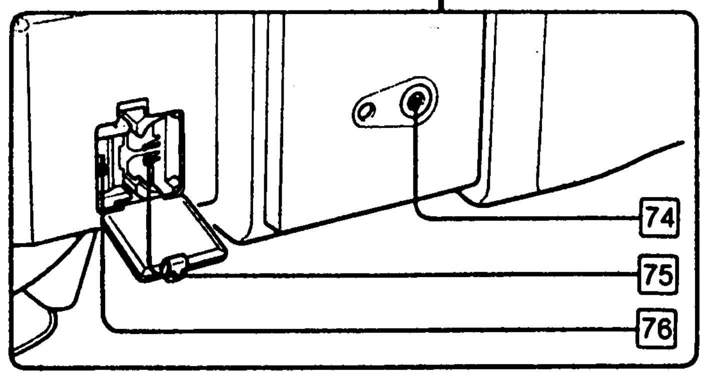
66 **STANDBY switch (66)**
Slide up to set the unit to recording pause mode.

67 **MIC (external microphone) jacks (phone jacks) (82), (184)**

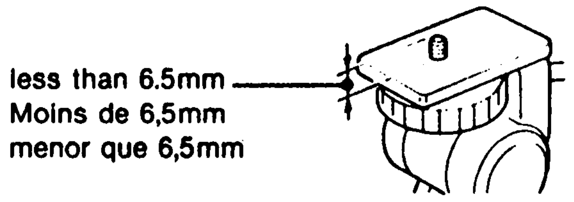
68 **Cassette holder**

A-8

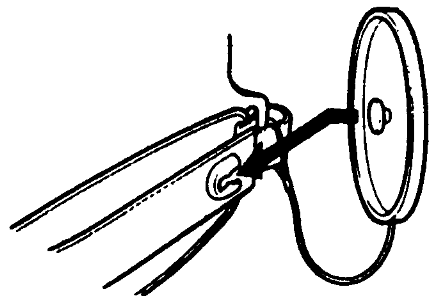




A-9



A-10



Location and Function of Parts and Controls

A-8

69 **PUSH SLIDE button** (64)
Press to adjust the position of the viewfinder.

70 **REMOTE ⅃ connector**

71 **VIEWFINDER connector** ㊳

72 **MIC (microphone) SELECT switch** (74)
Normally set to the left (green mark) position.

73 **Variable power zoom button** (108)

74 **Tripod receptacle**

75 **Lithium battery compartment** (52)

76 **Hi-fi sound output select switch** (167)

A-9

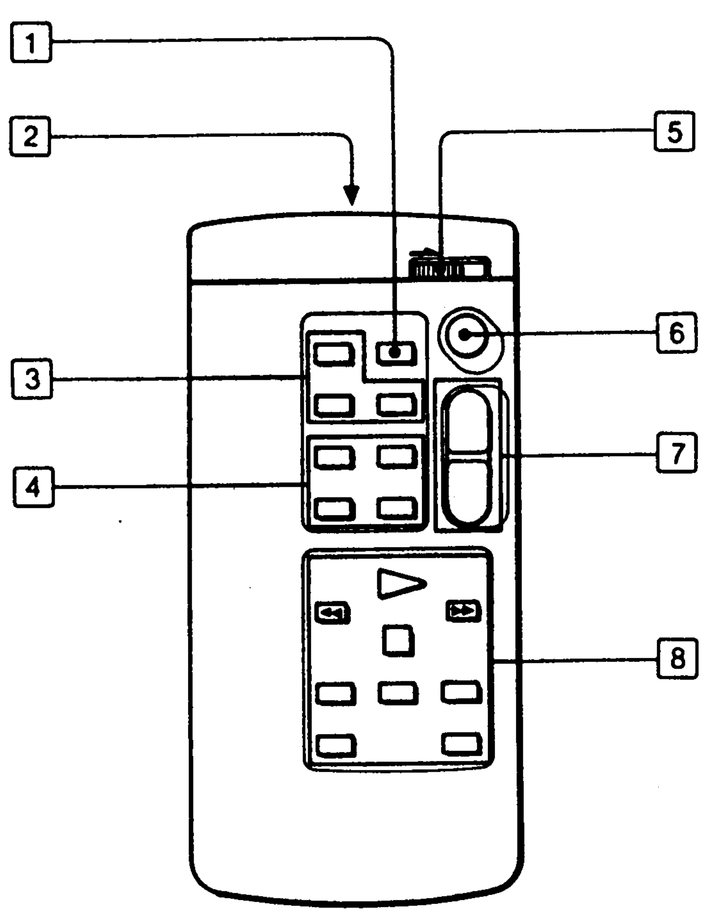
Note when attaching a tripod not manuafactured by Sony
When attaching a tripod not manufactured by Sony, the length of the camera mounting screw must be less than 6.5 mm.
Otherwise the screw may damage the inner parts of the camera.

A-10

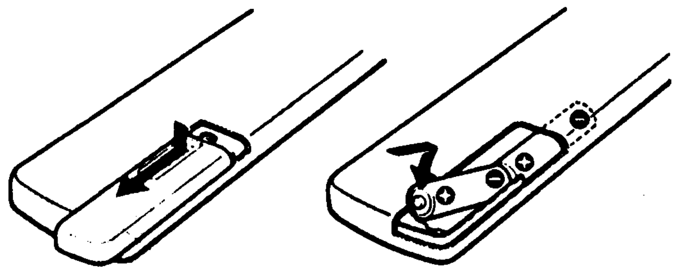
When the lens cap is removed
Attach the lens cap to the grip strap.

About the ⅃ mark
⅃ means the LANC connector.
LANC stands for Local Application Control Bus System. The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

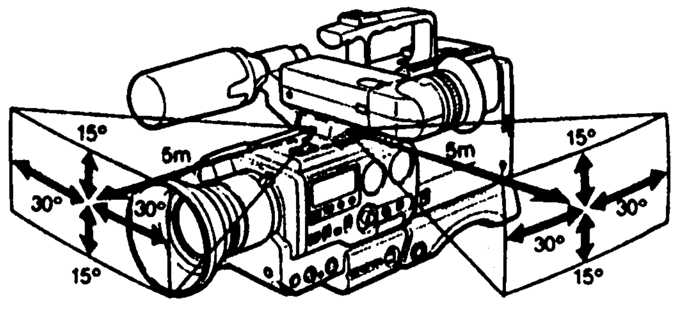
A-11



A-12



A-13



Location and Function of Parts and Controls

Remote Commander A-11

The buttons on the commander have the same function as the buttons on the recorder with the similar name or mark.

1 **DATA SCREEN button** (160)

2 **Transmitter**

3 **INDEX buttons** (164)
INDEX button
MARK button
ERASE button

4 **Digital picture buttons** (136)
Press to make the digital pictures.
MULTI button
ZOOM button
FLASH MOTION button
CLEAR button

5 **HOLD button**
To avoid miss operation, set in the direction of the arrow.

6 **START/STOP button**

7 **Power zoom button** (108)
The size of the subject in the scene can be changed.
The zooming speed cannot be changed with this button.

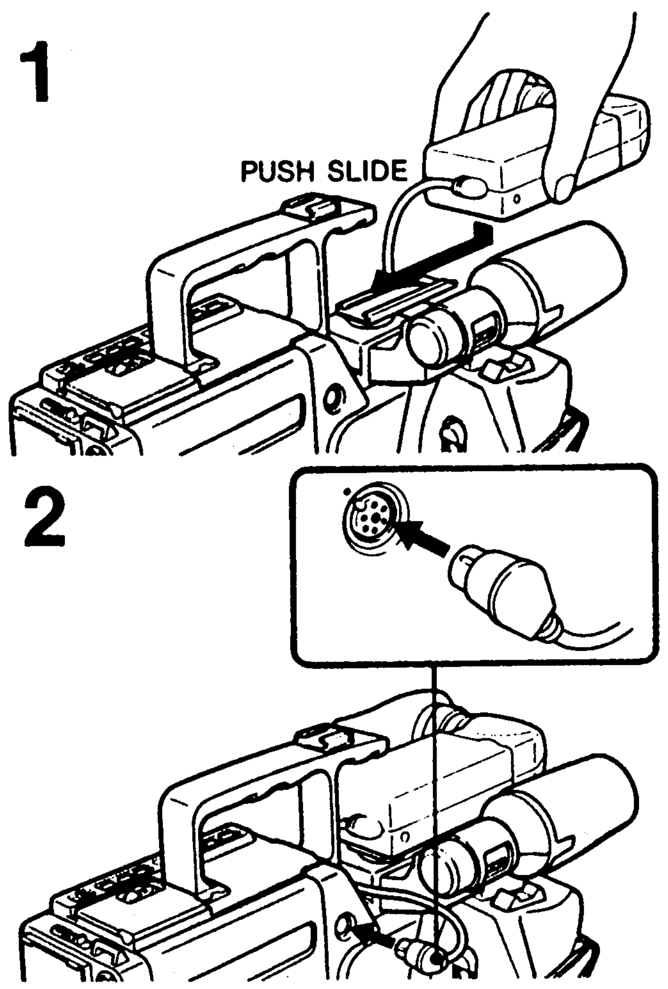
8 **Tape transport buttons**
◀◀ **REW** button, ▷ **PLAY** button, ▶▶ **FF** button, □ **STOP** button, ● **REC** button, **PAUSE** button, **FRAME** button, **SLOW** button

Installing the batteries A-12
Insert two size AA (R6) batteries with correct polarity.

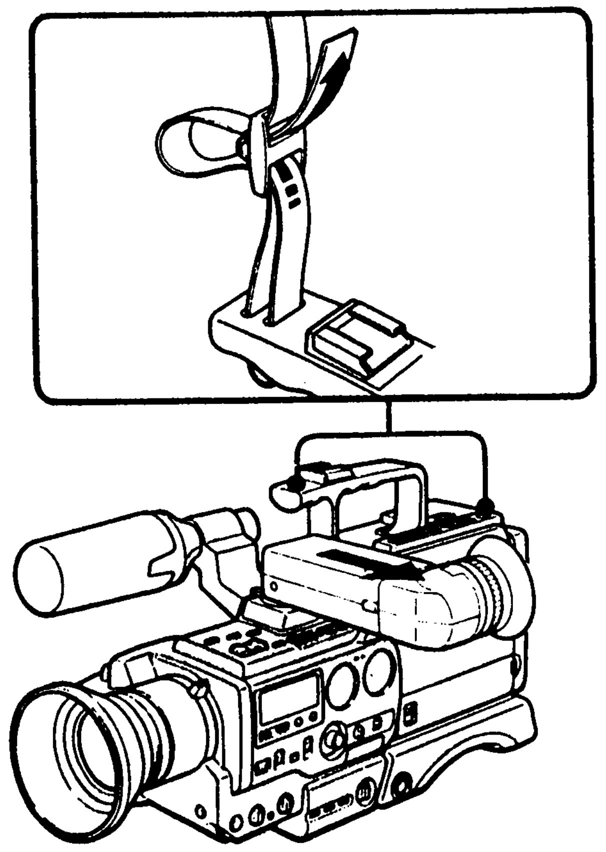
Operation range A-13

Notes on the handling of batteries
- With normal operation, the batteries will last for approximately six months.
- If the Commander will not be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

B-1



B-2



Attaching the viewfinder and the shoulder strap

Attaching the viewfinder

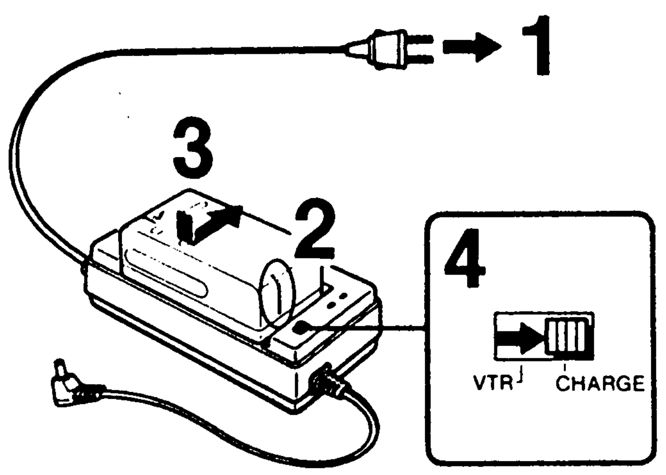
Before using the video camera recorder, attach the viewfinder. B-1

1 While pressing the PUSH SLIDE button, slide the viewfinder completely on the guide rail.
Move the viewfinder frontward or backward a little until it locks.
2 Align the projection of the plug with the groove of the connector and connect the viewfinder cable to the viewfinder connector.

Attaching the shoulder strap

Slide the viewfinder as illustrated and then thread the shoulder strap. B-2

C-1



Connecting the Power Sources

First, Choose the Power Source

Place	Power source	Accessory to be used
Outdoors	Battery pack	Battery pack NP-77H or NP-77
Indoors	House Current	AC power adaptor AC-V50

Note on power sources
Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape.
If this is done by accident, supply the power again immediately and turn on the power switch.

Using the Battery Pack

Step1 : Charge the battery pack. C-1

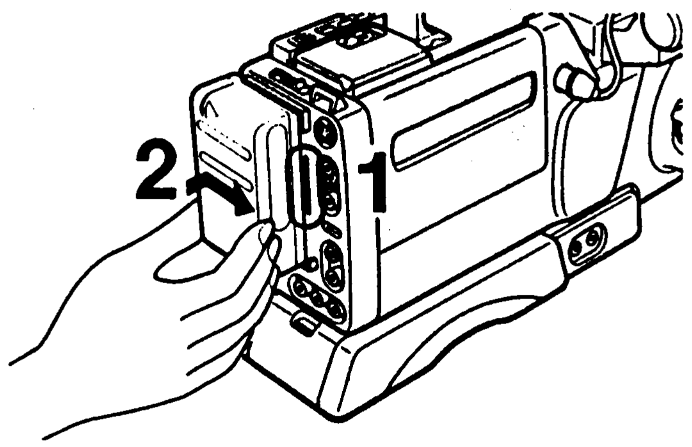
1 Connect the AC power adaptor to a wall outlet.
2 Align the grooves on the battery pack with those on the AC power adaptor.
3 Slide in the battery pack to the right, as illustrated.
4 Set the mode selector to CHARGE.
5 Charge the battery for:

	NP-77H	NP-77
Required charging time	140	120

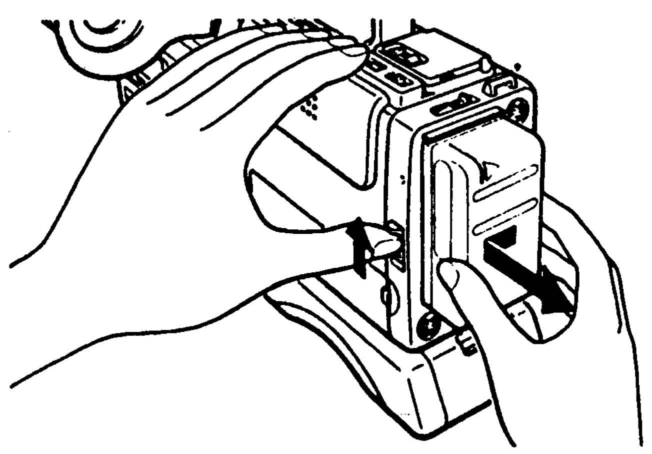
(approx. minutes)

See the instruction manual of the AC power adaptor for details.

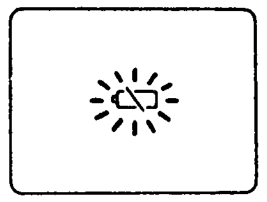
C-2



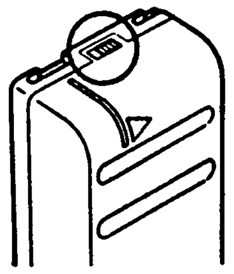
C-3



C-4



C-5



Step2 : Mount the battery pack on the camcorder C-2

1 Align the right side of the battery pack with the white line on the recorder.
2 Slide in the battery pack to the right.
Note: Make sure the battery fits completely on the mounting surface of the recorder. Imperfect fit may damage the projections on the recorder.

To remove the battery pack C-3
Slide BATT up, and at the same time, slide out the battery pack to the left.

Battery life
A fully charged battery pack lasts for:

	When the DIGITAL EFFECT switch is set to OFF.		When the DIGITAL EFFECT switch is set to ON.	
Battery life	NP-77H	NP-77	NP-77H	NP-77
	50	40	40	30

(approx. minutes)

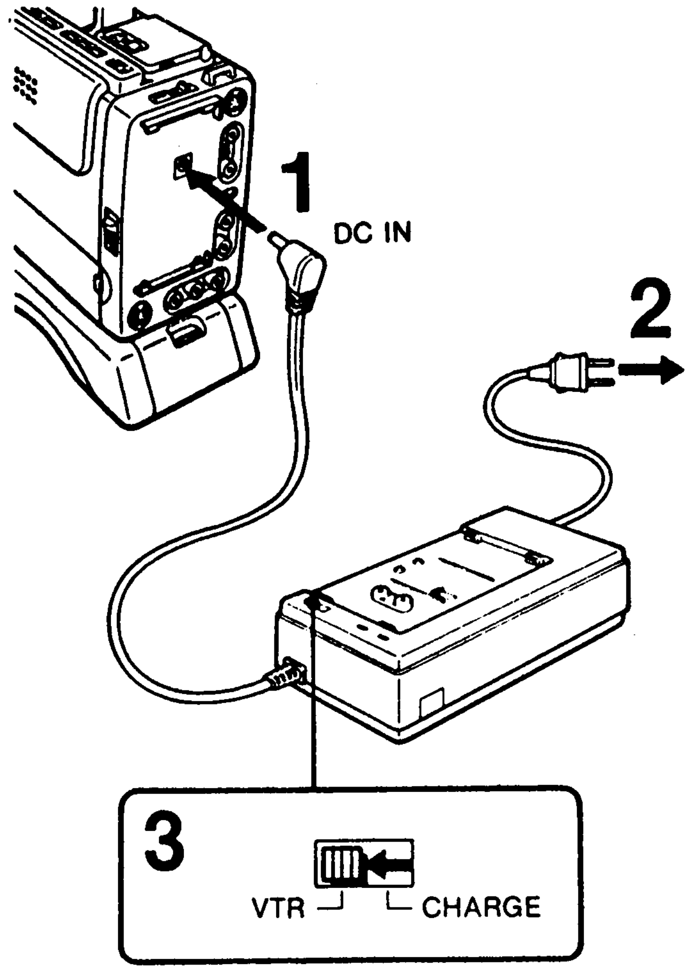
When the battery becomes weak, the ⌧ indication and red lamp will blink in the viewfinder. C-4
Replace the battery pack with a fully charged one.

- An NP-55 cannot be used for this unit because the battery life of the NP-55 is too short.

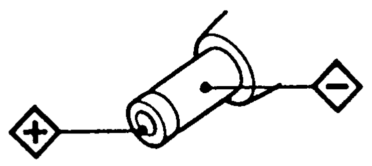
How to use the switch on the battery pack C-5

This switch is provided to show you the charging condition. Set the switch to the "no mark" position when the charging is completed. Set the switch to the "red mark" position when the battery is used up.

C-6



C-7

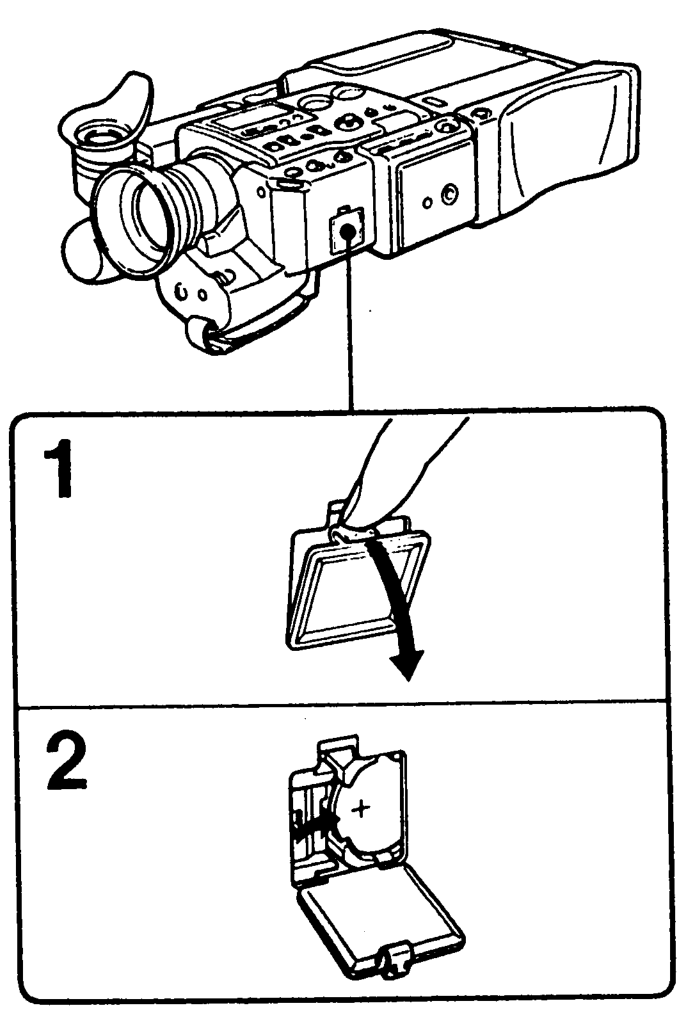


Using the AC Power Adaptor C-6

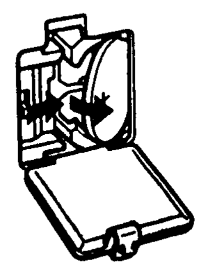
1 Connect the DC output plug of the AC power adaptor to the DC IN jack of the recorder.
2 Connect the AC power adaptor to a wall outlet.
3 Set the mode selector to VTR.
See the instruction manual of the AC power adaptor for details.

Note C-7
Use only the AC-V50 AC power adaptor (supplied).
Do not use any other AC power adaptor.
Polarity of the plug is shown in the illustration.

D-6



D-7



Connecting the Power Sources

Lithium Battery D-6

To insert the lithium battery
This unit uses a lithium battery to activate the clock and to keep titles in memory. Before operating the unit for the first time, install the supplied lithium battery:

1 Open the cover of the lithium battery compartment on the bottom.
2 Install the supplied CR2025 lithium battery with the ⊕ side facing out.
3 Close the cover.

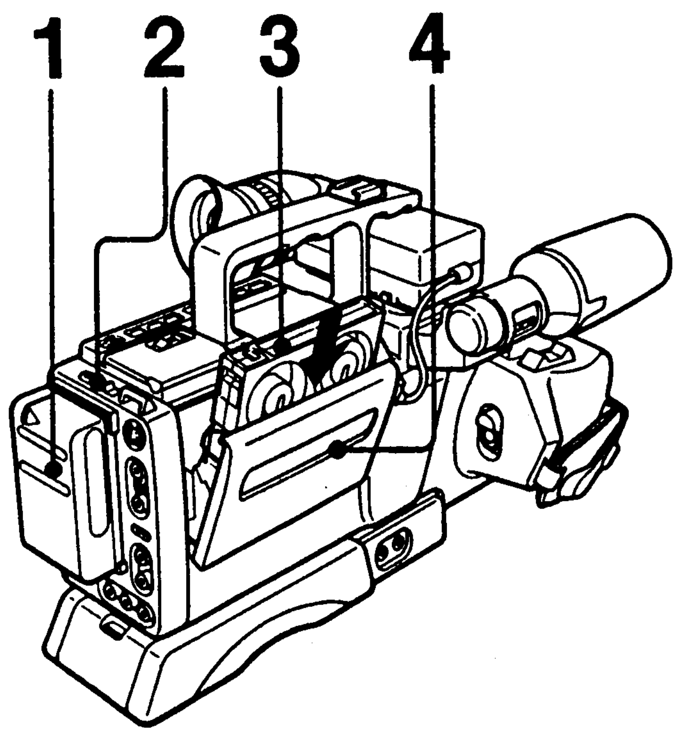
To remove the lithium battery D-7
Press the side of the battery in the direction indicated for installation.

Lithium battery life
Approximately 1 year in normal operation.
When the lithium battery becomes weak, the numbers blink in the display window and the time indication will blink on the viewfinder screen for about 5 seconds.
In this case, **replace the battery with a Sony CR2025 or Duracell DL-2025 lithium battery. Use of another battery may present a risk of fire or explosion.**
After replacing the battery, readjust the date, time and titles. (If the battery is replaced with the battery pack attached, the readjustments are not necesary.)

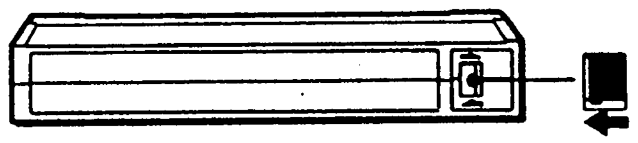
Notes on lithium battery
- Keep the lithium battery out of the reach of children.
  Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- When the battery pack is not attached, even if the lithium battery is installed, the indications in the display window will not light up.

WARNING
Battery may explode if mistreated.
Do not recharge, disassemble or dispose it in fire.

E-1



E-2



Inserting a Cassette

Cassette Insertion E-1

1 Connect a power source.
2 Press and sllide the EJECT button.
3 Insert a cassette with the window facing outside.
4 Press the cassette holder to close it.

Cassette Ejection

1 Make sure that a power source is connected.
2 Press and slide the EJECT button.
3 Take out the cassette and press the cassette holder to close it.

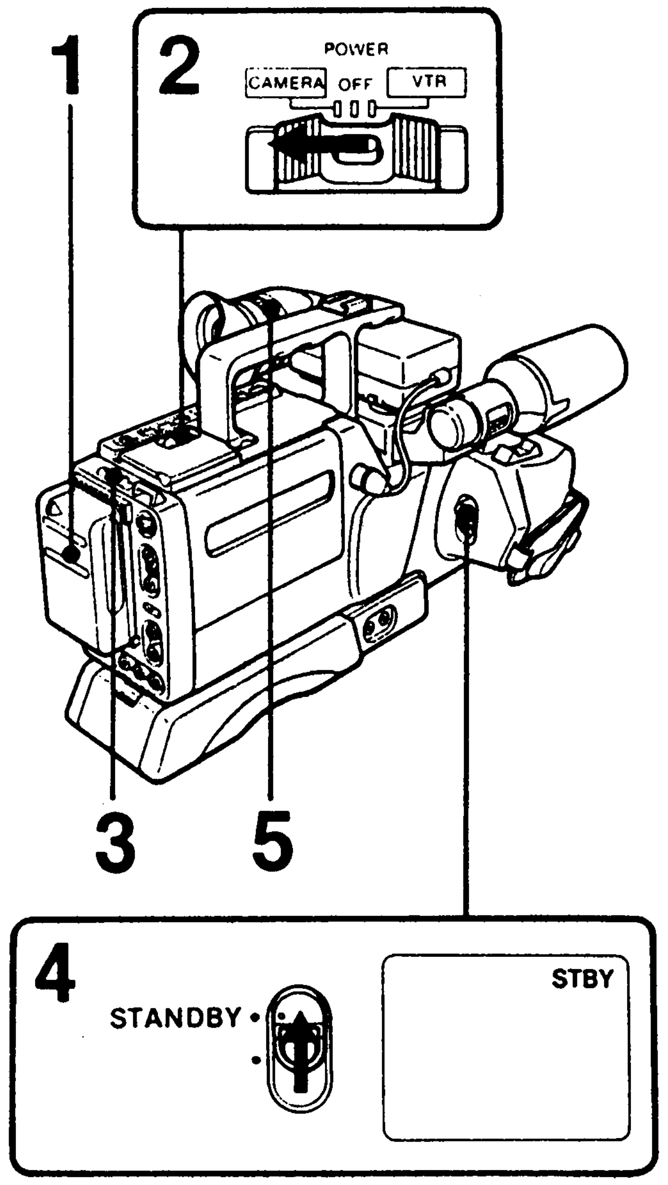
To Prevent Accidental Erasure

Slide out the tab on the cassette so that it covers the opening. (A red mark will appear.) E-2

To re-record on the cassette, slide the tab in to uncover the opening.

Notes
- Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the kind of tape, thickness of tape, or if the tab is out or in, etc.
- To record from the beginning of the tape, run the video camera recorder for about 15 seconds at the beginning of a cassette before recording. It will avoid missing the starting point during playback on a video cassette recorder.

E-3



Camera Operation

Adjustment of the Viewfinder Lens

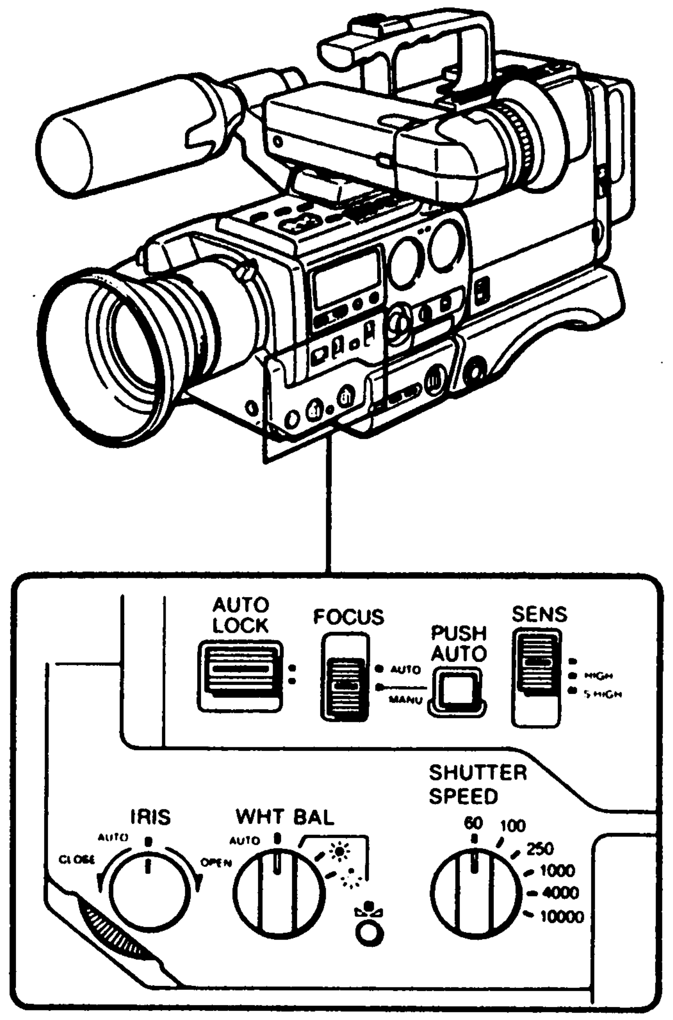
The position of the viewfinder lens for optimum vision varies depending on the person. [E-3]

1 Connect a power source.
2 While pressing the small button, set the POWER switch to CAMERA.
3 Insert a cassette.
4 Slide the STANDBY switch up.
5 Turn the viewfinder lens adjustment ring so that the indicator displayed on the viewfinder screen comes into sharp focus.

Adjustment of the viewfinder lens is necessary only for your initial use, or for use after someone else.

Note
If you leave the unit in the recording pause mode for 5 minutes or more, the unit will be automatically turned off. To resume recording pause mode, slide the STANDBY switch down once and slide it up again. To start recording, press the START/STOP button.

E-4



Selection of the Automatic and Manual Adjustments

Function of the AUTO LOCK Switch

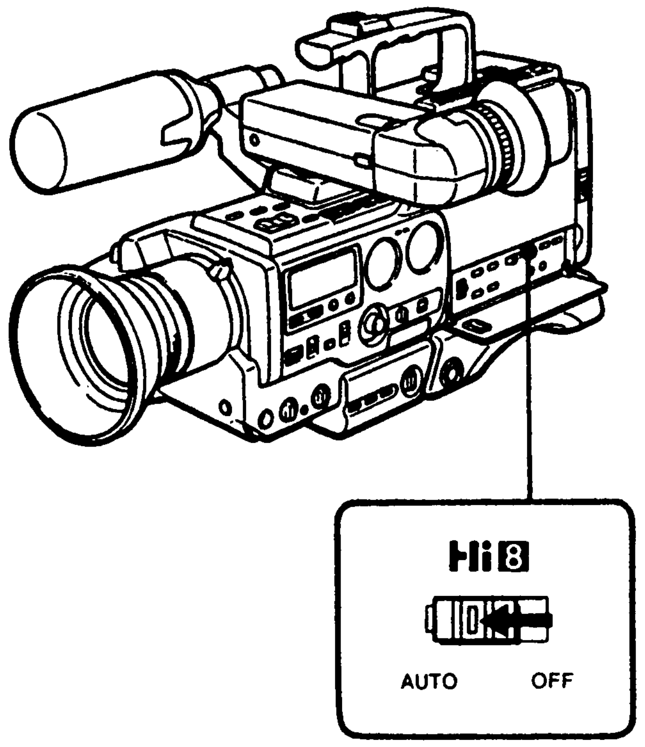
When the AUTO LOCK switch is set to AUTO LOCK (green mark), the iris, focus, white balance, sensitivity and shutter speed (1/60) are adjusted automatically. But under certain circumstances, such as the white balance adjustment, manual adjustment is better for effective recording. [E-4]

When the AUTO LOCK switch is set to the lower position (white mark), each manual function works as follows.

FOCUS See page 90.	For manual focusing, set to MANU.
PUSH AUTO See page 94.	When this button is kept depressed, auto focusing activates in the manual focusing mode.
WHT BAL See page 96.	According to the condition in which the recorder is used, set to ☀ or ☼.
▣ **WHT BAL** See page 98.	When the WHT BAL is set to ▣ and the ▣ button is pressed, the white balance is adjusted manually.
SENS See page 102.	Set to HIGH or S-HIGH to get high sensitivity.
IRIS See page 100.	• When the shooting subject is too dark, turn to OPEN. • When the shooting subject is too bright, turn to CLOSE.
SHUTTER SPEED See page 104.	Set this according to the shooting subject.

Even if the AUTO LOCK switch is set to the lower position, if each control is set to AUTO, it auto function will work. It is convenient to use some functions in manual mode and others in automatic mode.

E-5



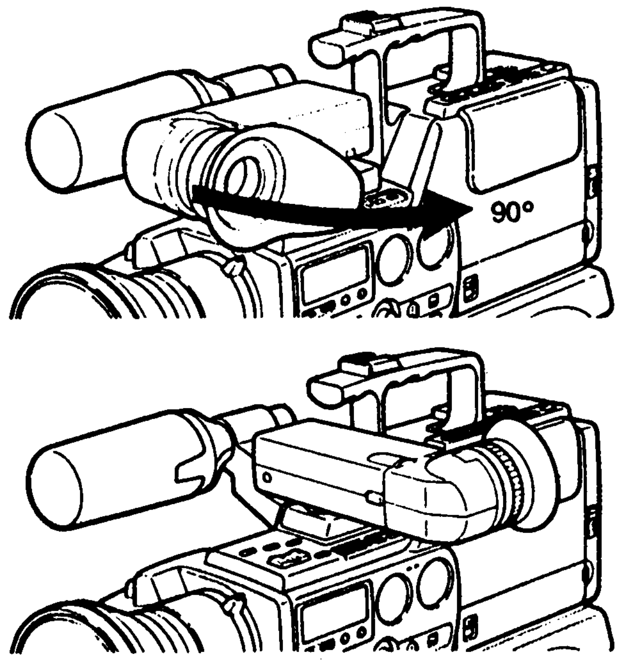
Selection of the Automatic and Manual Adjustments

Function of the Hi8 Mode Switch

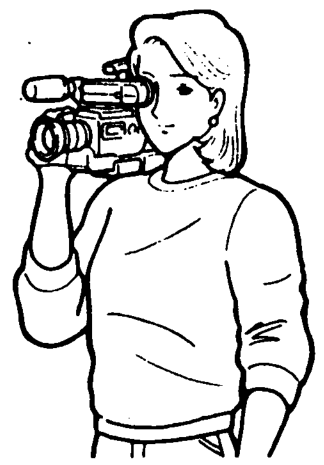
When the Hi8 mode switch is set to AUTO, the recording mode is selected automatically.
- For Hi8 video system tape: Hi8 mode recording
- For standard 8mm tape: Normal mode recording

When a tape for the Hi8 video system is used for normal recording, set the Hi8 mode switch to OFF. E-5

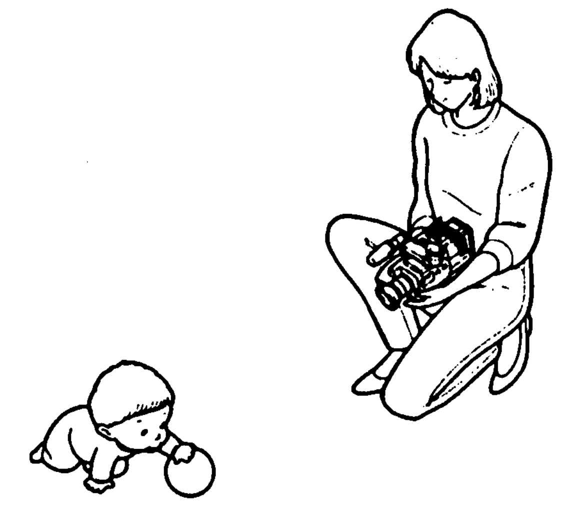
F-1



F-2



F-3



Easy Camera Recording with Automatic Adjustment

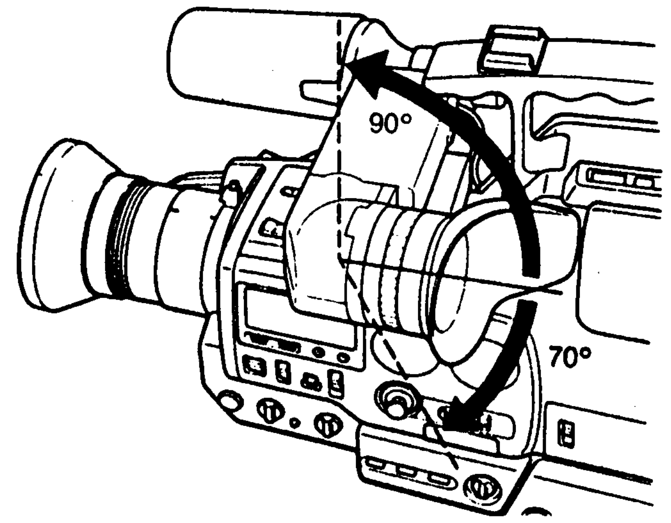
Holding the Video Camera Recorder

Setting of the viewfinder F-1
Turn the viewfinder until it locks (90 degrees).

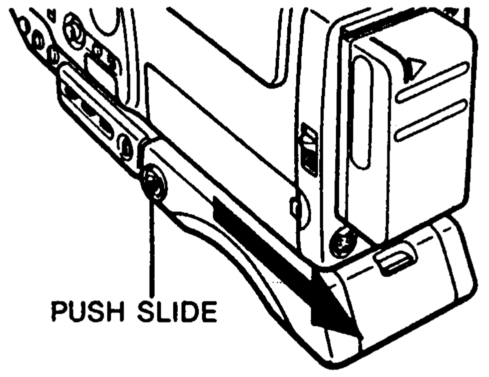
Basic posture for recording F-2
Put the video camera recorder on your shoulder and your right elbow firmly against your side.

For low position recording F-3
1 Turn up the viewfinder.
2 Press the START/STOP button at the side of the lens.

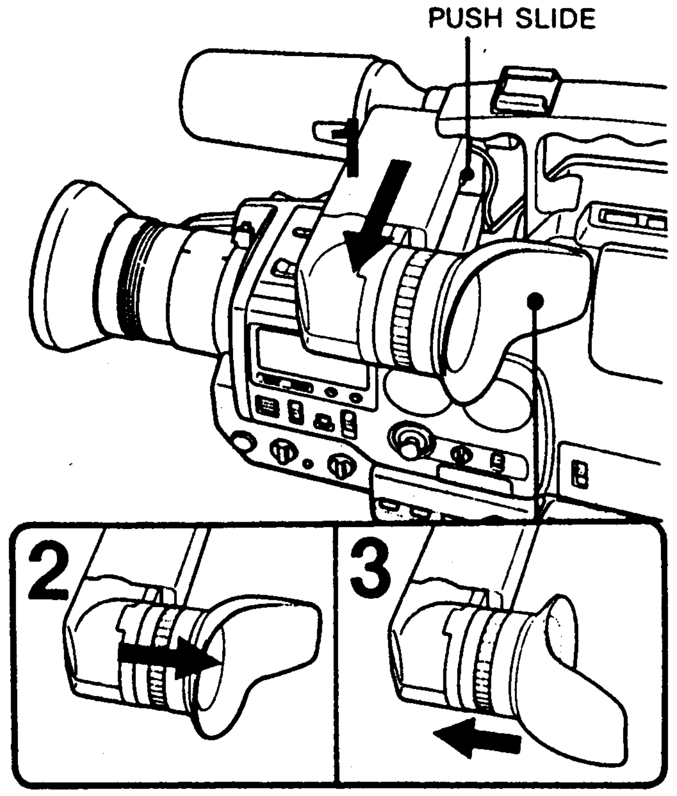
F-4



F-5



F-6



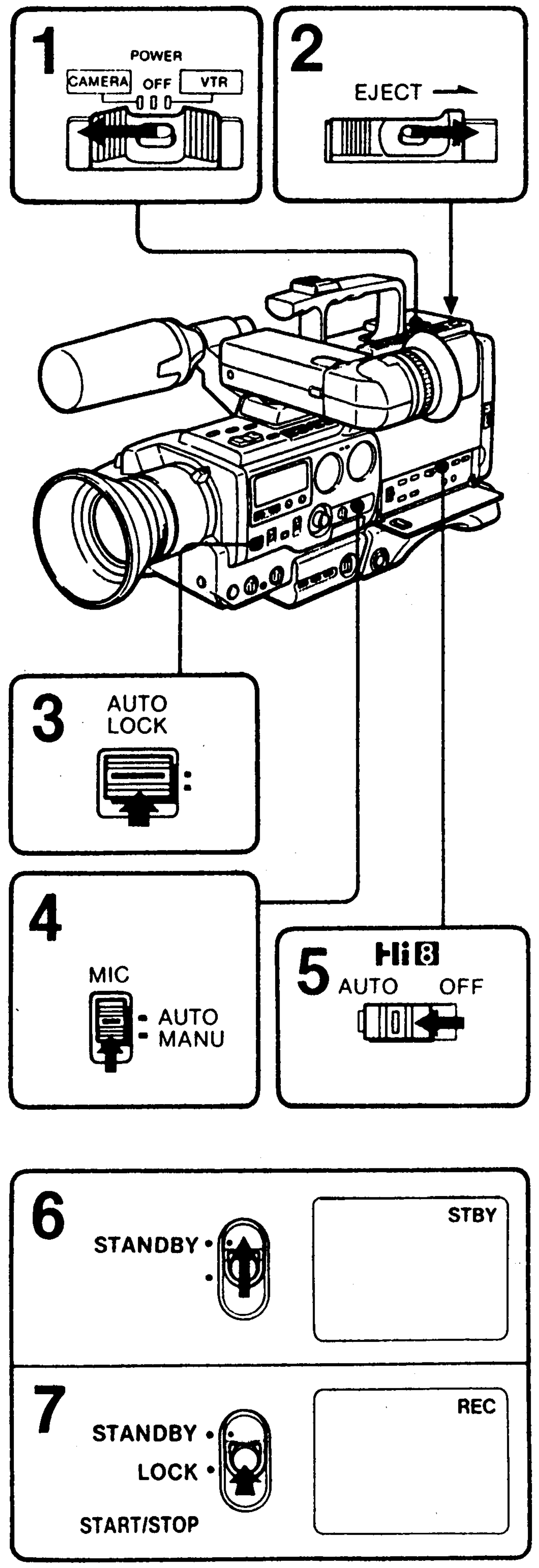
Easy Camera Recording with Automatic Adjustment

To change the angle of the viewfinder F-4
The viewfinder can be turned 90 degrees up and 70 degrees down to make high-angle or low angle shooting possible.

To adjust the position of the shoulder mount F-5
While pressing the PUSH SLIDE button, slide the shoulder mount backward. The shoulder mount can be set to one of two positions.

To view with your left eye F-6
1 While pressing the PUSH SLIDE button, slide the viewfinder. The viewfinder can be set to one of two positions.
2 Pull out the rubber eyecup.
3 Turn the eyecup and reattach it.

F-7



Easy Camera Recording with Automatic Adjustment

How to Record

F-7

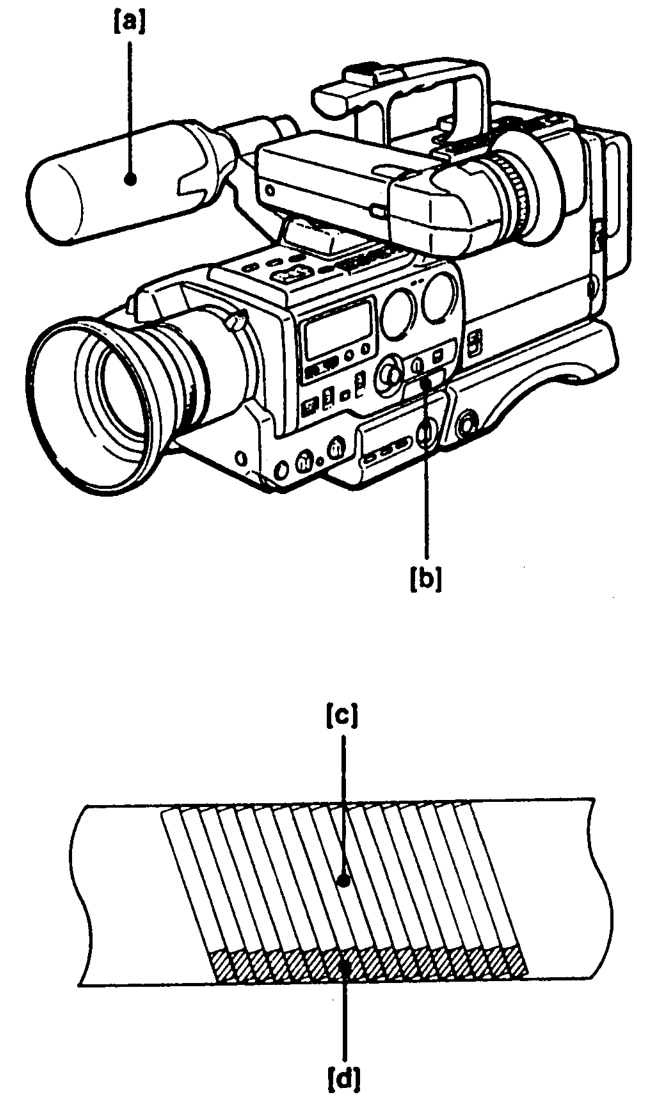
1 While pressing the small button, set the POWER switch to CAMERA.
2 Insert the cassette.
3 Set the AUTO LOCK switch to AUTO LOCK (green position).
For manual adjustment, see pages 90 to 108.
To adjust the white balance precisely, we recommend the manual white balance adjustment with the white lens cap.
4 Set the MIC switch to AUTO.
5 Set the Hi8 mode switch to AUTO (green mark).
6 Slide the STANDBY switch up.
The unit will enter the recording pause mode.
7 Press the START/STOP button.
Recording will start.

For digital picture recording, see "Viewing digital picture" on page 136.

Check on the viewfinder screen
STBY: Displayed during recording pause mode.
REC: Displayed during recording.

To stop recording
Press the START/STOP button again.
The unit will enter the recording pause mode.
Avoid rough handling or mechaniical shock to the unit. A smooth transition between scenes may not be made.

G-1



Audio Recording

There are two kinds of built-in microphones, one-point stereo microphone and narration microphone.
The one-point stereo microphone is a uni-directional type. The sharp directivity allows recording of the sound from the subject itself and its surroundings with natural sound quality.
The narration microphone is to be used for telling the event during recording.
The sounds from the one point stereo microphone can be recorded in stereo on the standard track and the PCM track, and the sounds from the narration microphone can be recorded in monaural on the standard track.

An external stereo microphone and external narration microphone can be connected to this unit, also.
For details on the recording tracks where the sounds from each microphone are recorded, see the table below.

When the built-in microphone is used, the audio signal is recorded as follows. G-1
[a] One point stereo microphone
[b] Narration microphone
[c] Standard track (Hi-fi stereo recording)
[d] PCM track (digital stereo recording)

Sound to be recorded / Microphone to be used	Standard track		PCM track	
	L channel	R channel	L channel	R channel
One-point stereo microphone	L sound	R sound	L sound	R sound
When the narration microphone is set to ON.	L sound and narration (monaural)	R sound and narration (monaural)	L sound	R sound

Audio Recording

When an external microphone is connected, the audio signal is recorded as follows.
The sound from the external microphone can be recorded in stereo on the standard track and the PCM track. When the built-in narration microphone is used with the external microphone, the sounds from both microphones are mixed on the standard track.

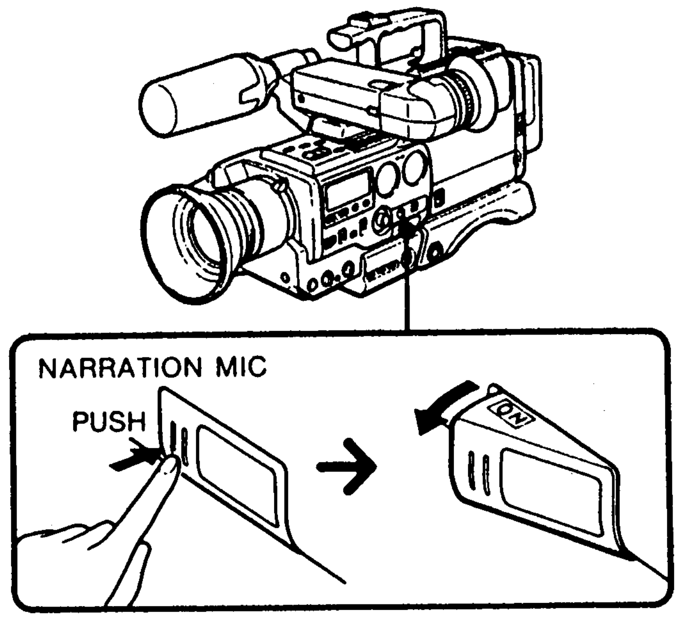
Sound to be recorded / Connection	Standard track		PCM track	
	L channel	R channel	L channel	R channel
L and R	external L microphone	external R microphone	external L microphone	external R microphone
L	external L microphone	external L microphone	external L microphone	external L microphone
R	built-in L microphone	external R microphone	built-in L microphone	external R microphone

When the external narration microphone is used
The sound from the external narration microphone can be recorded in monaural on the standard track. The Hi-Fi lamp will be turned off (page 86).
When the built-in stereo microphone or the external stereo microphone is used with the external narration microphone, the sound from the stereo microphone can be recorded on the PCM track.

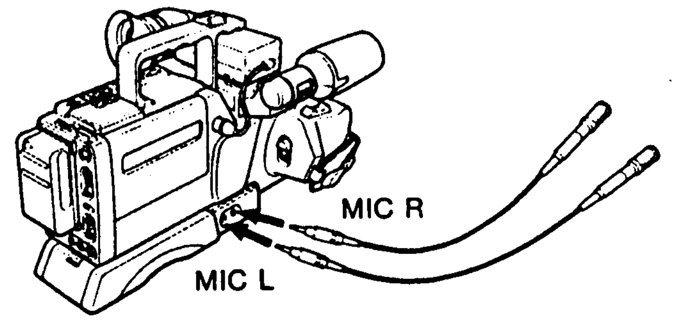
Use of the One Point Stereo Microphone

Normally set the MIC switch to AUTO and the recording level will be adjusted automatically. However, according to the recording condition or subject, more effective recording can be done by manual adjustment. See "Recording level adjustment" on page 86.
When there is strong wind, set the MIC SELECT switch to WIND. The effects of wind noise will be reduced.

G-2



G-3



Use of the Built-in Narration Microphone G-2

During recording, the narration can be recorded. Press the PUSH mark on the NARRATION MIC.
While recording the narration, the sound from the one-point stereo microphone can be recorded on the standard track and the PCM track.
While recording with the POWER switch set to VTR, the narration can be recorded.

After using, push in the microphone.
The narration microphone will be turned off automatically.

Use of an External Stereo Microphone G-3

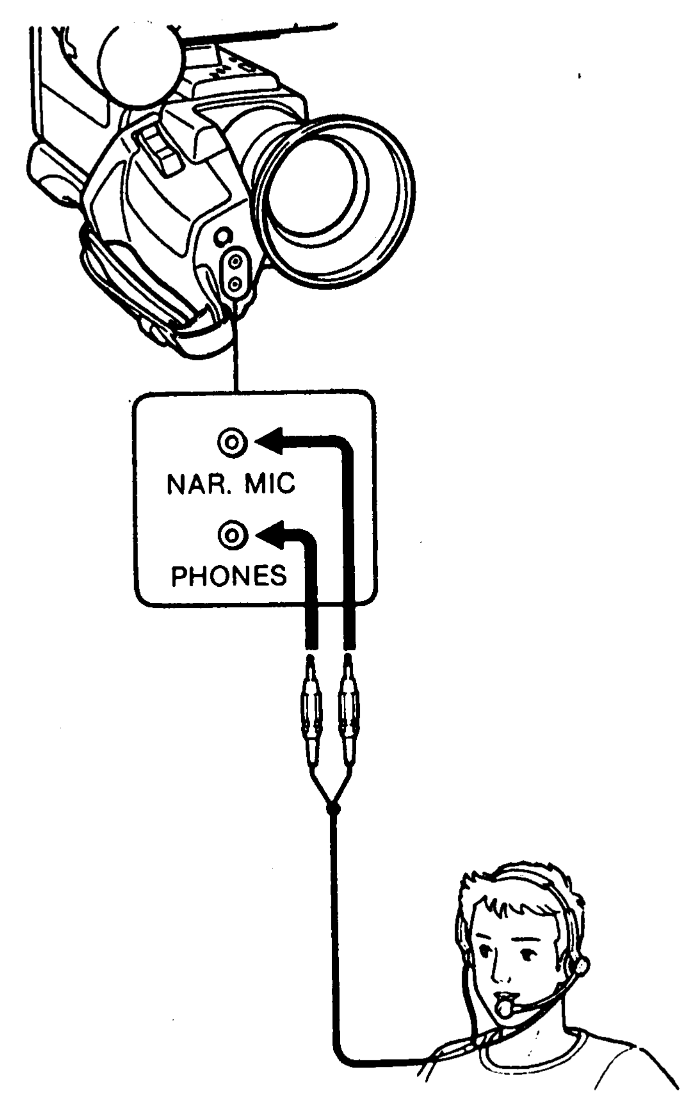
Connection example
Connect each microphone to the MIC L and R jacks.
When one microphone is connected, for the track where the sound from the built-in or external microphone is recorded, see the table on page 80.

Variety of optional microphones
- To pick up specific sounds
  — uni-directional microphone
- To isolate a sound
  — supercardioid microphone
- To allow the field of recording to be changed
  — zoom microphone
- To pick up sounds equally from all directions
  — omni-directional microphone

Adjustment of the recording level
See the "Recording level adjustment" on page 86.

Note
Keep the microphone far away from the TV so that the hum noise does not occur.

G-4



Use of an External Narration Microphone G-4

When a stereo headphone equipped with the microphone is used, the narration can be dubbed during monitoring the recording sound.

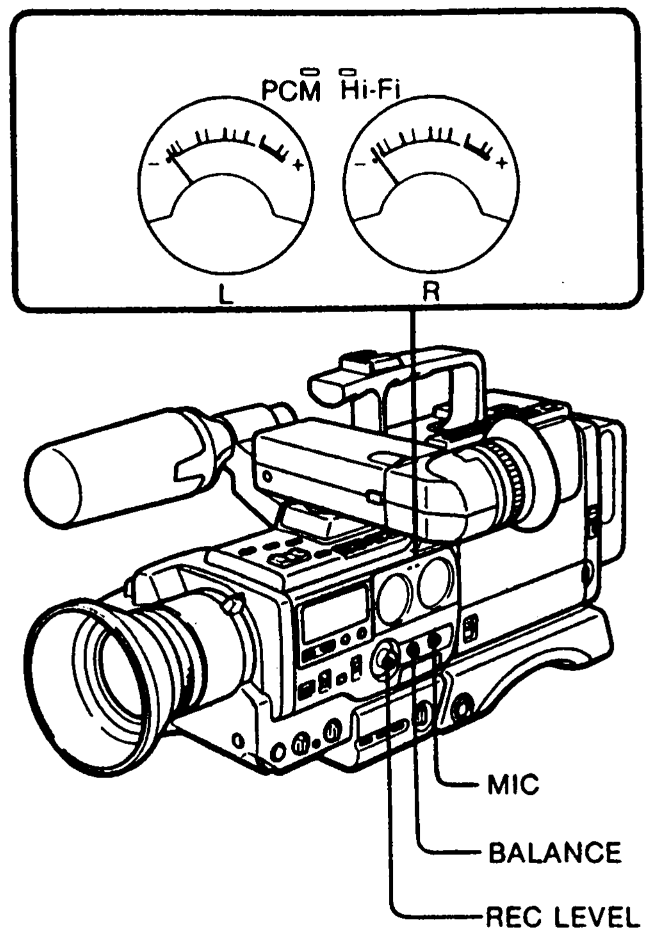
When the external narration microphone is connected
- The built-in narration microphone will not be functioned.
- The sounds from only the external narration microphone can be recorded in monaural on the standard track.

When the sounds are played back by the VCR without the PCM recording or playback function.
The sounds from only the external narration microphone will be played back.

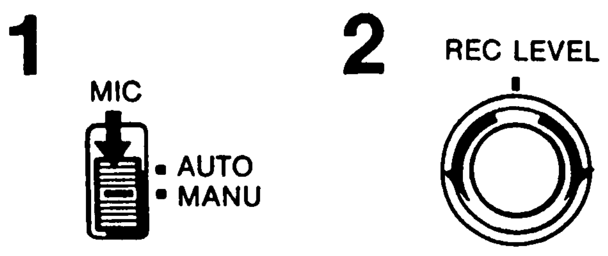
Adjustment of the recording level
See the "Recording level adjustment" on page 86.

Recording Level Adjustment

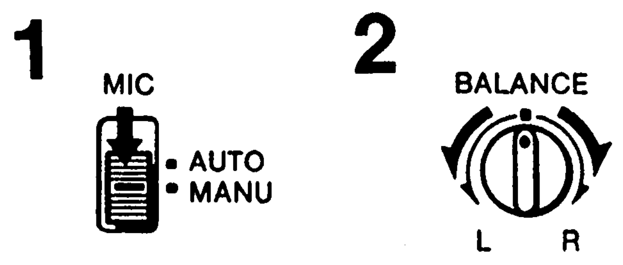
G-5



G-6



G-7



When the MIC switch is set to the green (upper) position, the recording level of the microphone will be adjusted automatically. However, for the audio dubbing or the tape editing, the manual adjustment is recommended. G-5

Volume adjustment G-6
1 Set the MIC switch to MANU.
2 Adjust the volume.
Turn the REC LEVEL control so that the meter sometimes enter into the red zone.

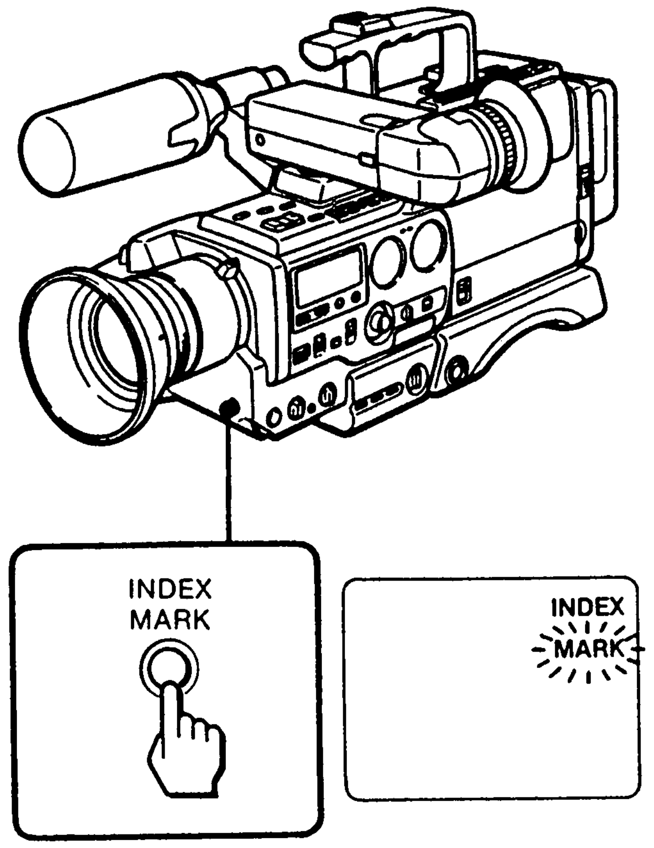
Balance adjustment G-7
1 Set the MIC switch to MANU.
2 Turn the BALANCE control to adjust the balance.
To increase the volume of the right channel — Turn towards the R side.
To increase the volume of the left channel — Turn towards the L side.

Order of the adjustments
First adjust the volume and then balance.

Reading the level meter
- If the meter swings into the red zone, the recorded sound is distorted.
- If the meter hardly swings at the left position, recording will be noisy.

To Mark Index Signals during Recording

G-8



The desired program can be easily located by an index signal marked on the tape.
Press the INDEX MARK button at any desired point on the tape during camera recording. G-8

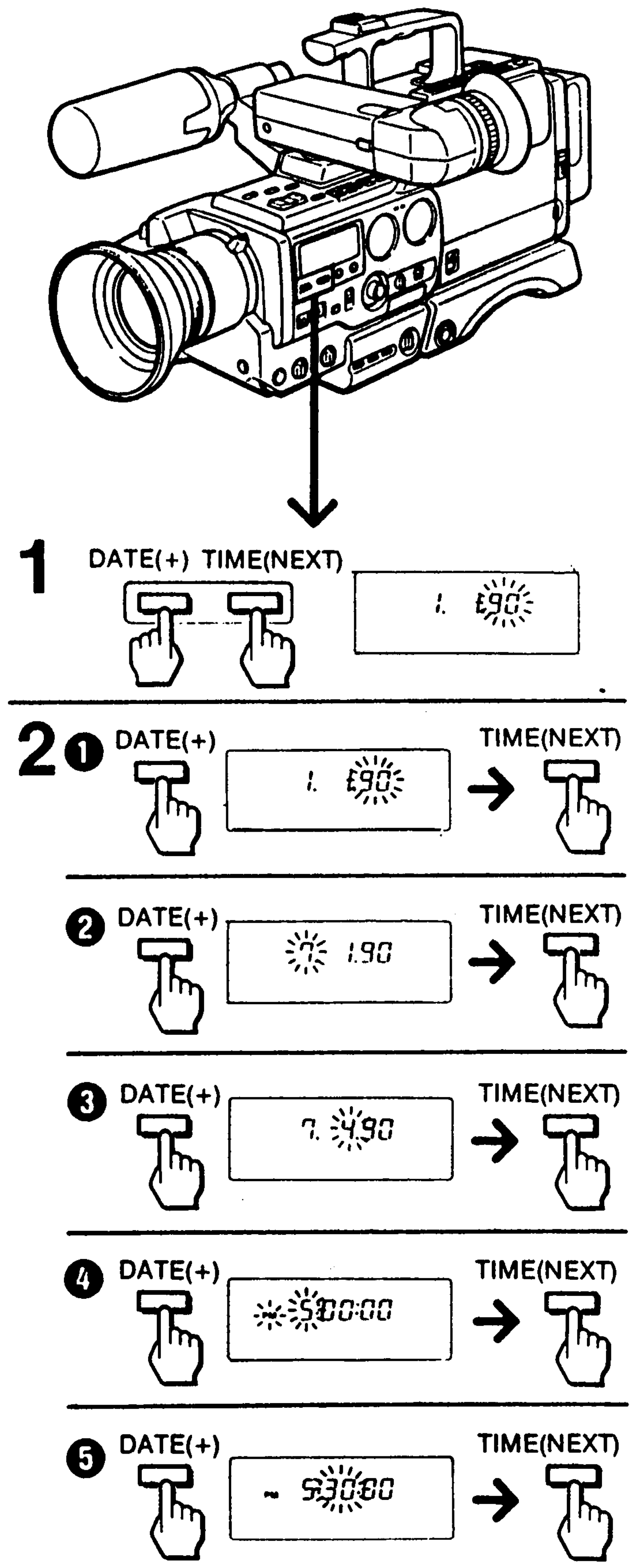
When the index signal is marked in the recording pause mode (the MARK indication blinks), the index signal will be marked just after the recording pause mode is released.

For other index operations. see page 164.

Notes
- The index signals can be marked at any desired point. But make sure there is more than 2 minutes of space between two index signals. If there is more than one index signal marked within an interval of 2 minutes on a normal tape run, the unit may not function properly.
- The INDEX MARK indication disappears automatically.
  Continue to record until the INDEX MARK disappears so that the recorded index signal can be searched correctly in the playback mode.

When the POWER switch is set to VTR, the index signal can also be marked during recording.
If the REC switch is pressed to start recording in the stop mode, an index signal will be automatically marked at the beginning of the tape.

H-10



Recording Date or Time

Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time, make sure that the fully-charged battery pack and lithium battery are installed.

To Set Date and Time H-10

1 Press the DATE and TIME buttons simultaneously **for more than 3 seconds.** The date indication will appear in the display window (date/time setting mode). The DATE button now functions as the + button and the TIME button functions as the next button.

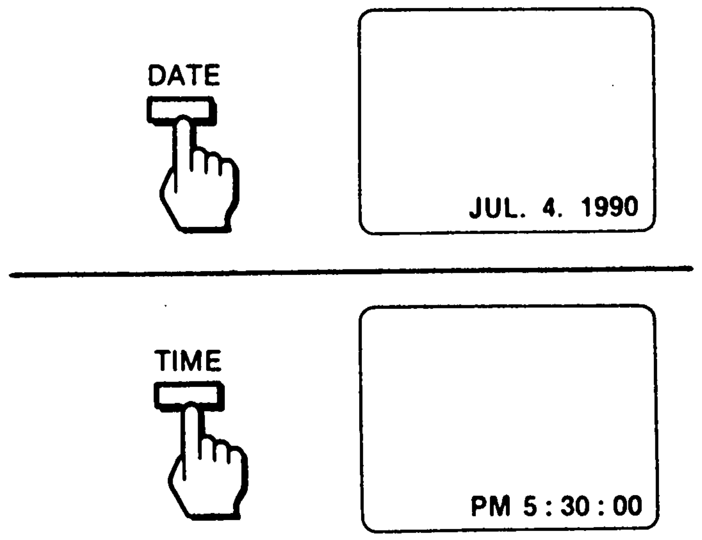
2 Adjust the ❶ year, ❷ month, ❸ day, ❹ hour and ❺ minute in sequence, following the illustration. First adjust the blinking digits with the DATE button, and then press the TIME button. After adjusting the minute digits, press the TIME button at the same time wiith an announced time signal.

The clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

To clear the time indication from the display
Press the TIME button again.

The DATE button can be pressed in two ways
- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

H-11



Recording Date or Time

To check the preset date or time
Press the DATE or TIME button in the recording pause mode. When the same button is pressed again, the indication goes off.

To readjust an incorrect date or time
Set the unit to date/time setting mode and press the TIME button repeatedly until the incorrect digit blinks. Correct it with the DATE button and press the TIME button. After adjusting the minute digits, press the TIME button at the same time with an announced time signal.

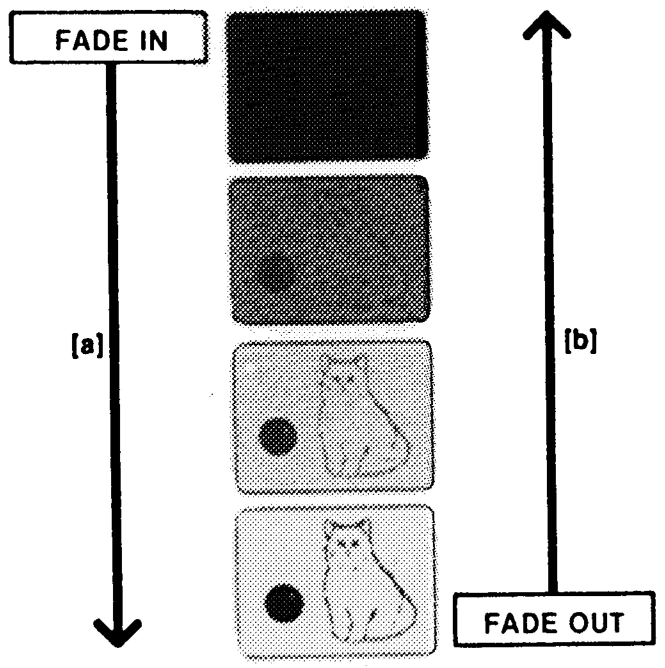
Note
The date and time cannot be set during recording.
If the recorder is set to the recording mode while setting the date and time, the setting mode will be released.

To Record the Date or Time H-11

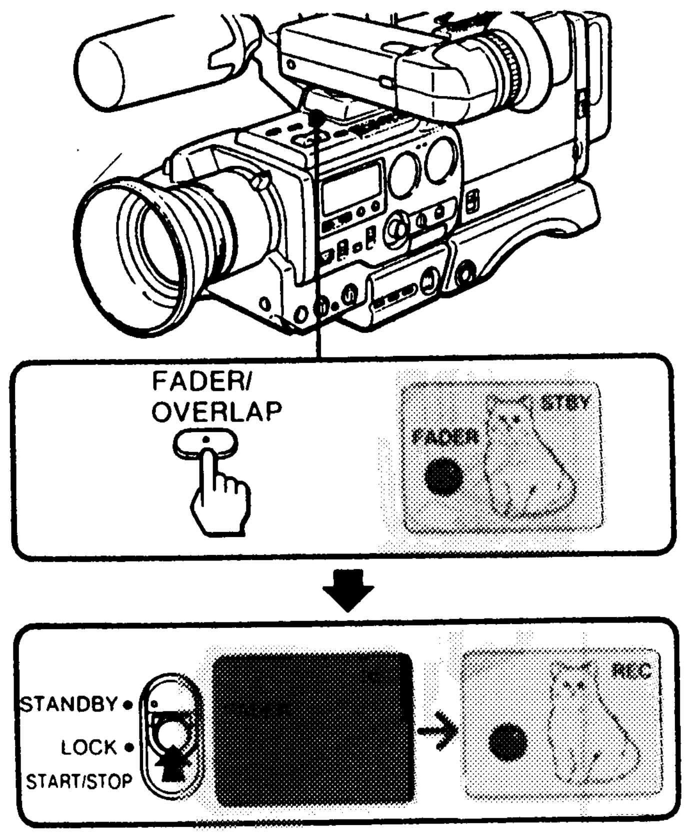
During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.
The date or time being displayed will be recorded together with the picture.

To stop recording the date or time
Press the DATE or TIME button again. The picture recording will continue.

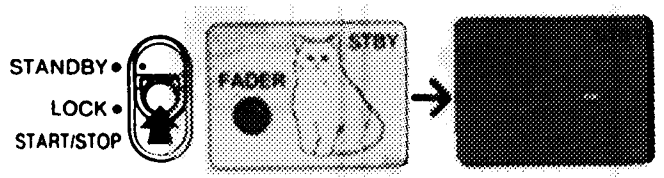
I-1



I-2



I-3



Fade-in and Fade-out I-1

When fade-in, the picture and sound will appear gradually from a black, silent scene. **[a]**
With fade-out, the picture and sound will disappear gradually. **[b]**
Dramatic effects can be added by using fade-in at the beginning of a recording and fade-out at the end.

To Fade in I-2

1 Slide the STANDBY switch up to set the unit to recording pause mode.
2 Press the FADER/OVERLAP button **once**.
3 Press START/STOP button to start camera recording.
Fade-in will be performed.

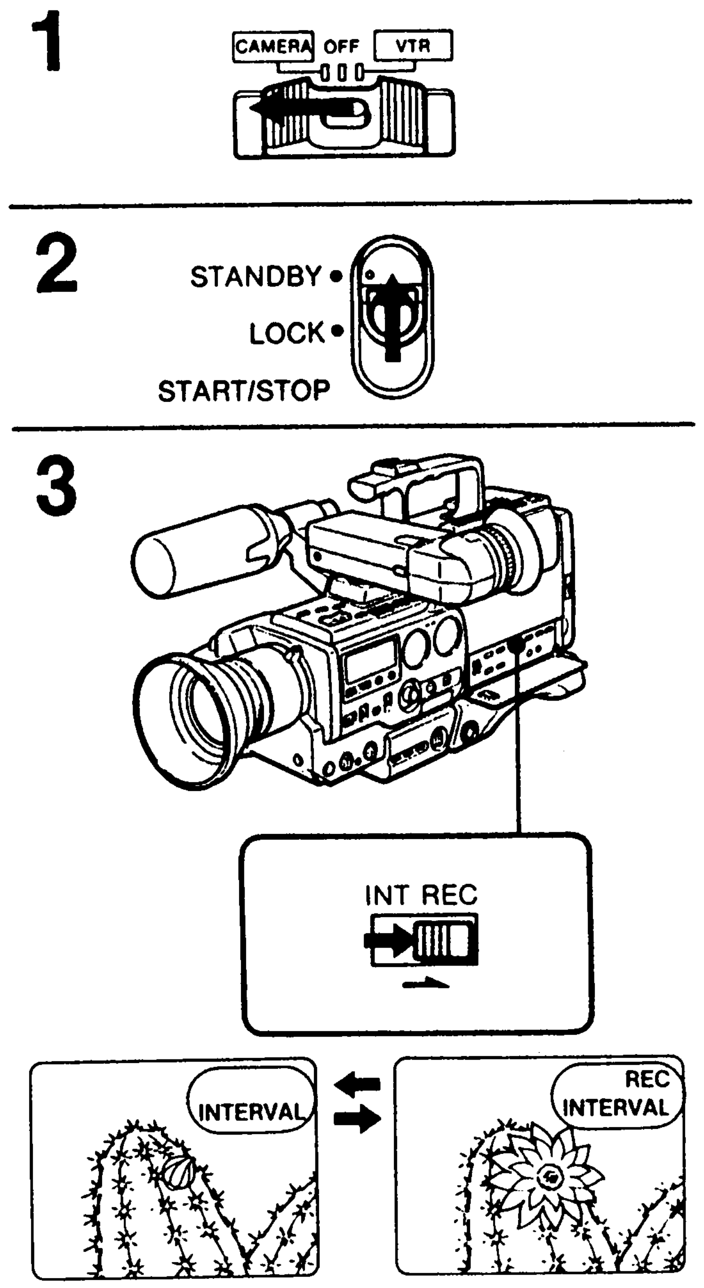
To Fade out I-3

1 Start camera recording.
2 Press the FADER/OVERLAP button **once**.
3 At the point where fade-out is to be started, press the START/STOP button.
Fade-out will be performed and then recording will stop.

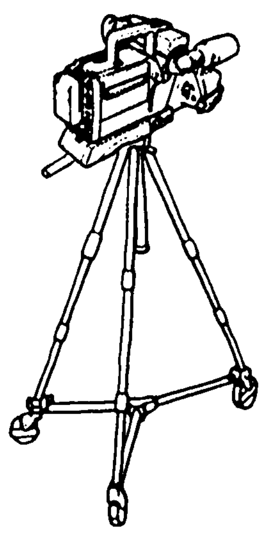
To cancel FADER mode before fade-in or fade-out
Press the FADER/OVERLAP button **twice** so that the FADER indication disappears.

Notes
- The FADER/OVERLAP button will function while the STBY or REC indication lights. When the +VTR button is set in the direction of the arrow, the FADER/OVERLAP button will not function in the stop mode.
- The FADER mode is cancelled automatically once fade-in or fade-out has been performed.
- When fade-in or fade-out is operated while the title appears, the title will change to monochrome.

I-4



I-5



Interval Recording

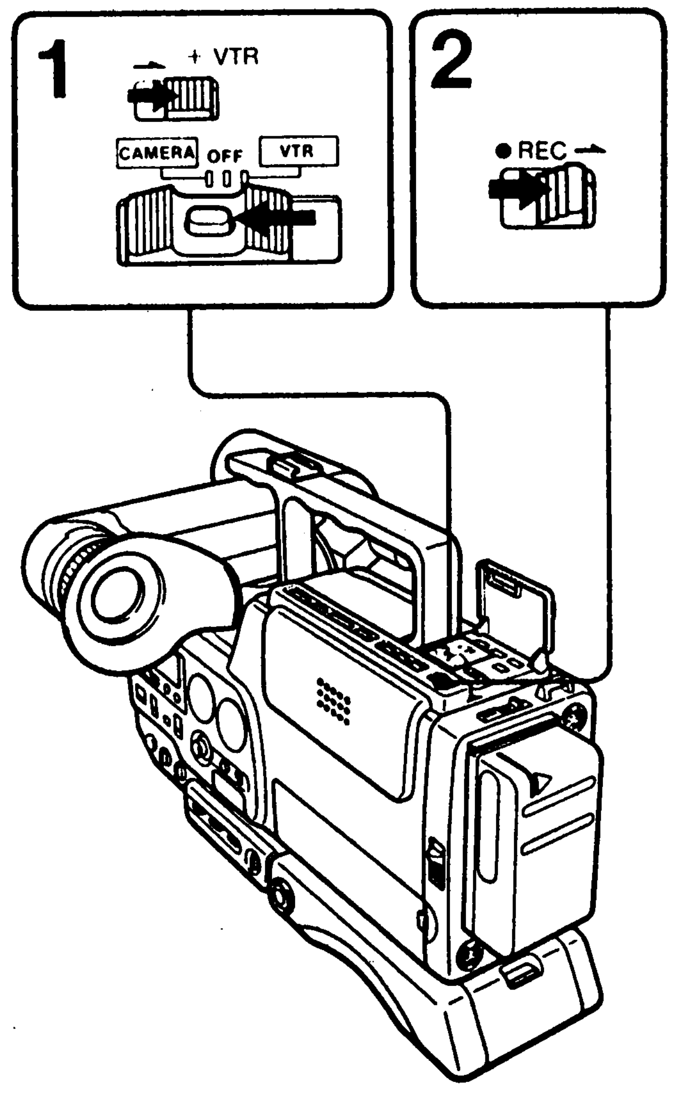
A recording of one second will be activated repeatedly at one minute intervals. This is convenient for recording changes such as a flower developing from bud to flower or on insect growing wings. I-4

1 While pressing the small button, set the POWER switch to CAMERA.
2 Set the video camera recorder to the recording pause mode.
3 Slide the INT REC button in the direction of the arrow. The interval recording will be started and the "STBY INTERVAL" will be displayed.
4 Slide the INT REC button in the direction of the arrow to stop the interval recording.

- For interval recording, signals from the VIDEO/AUDIO input jacks can be used. Set the POWER switch to VTR.

For stable recording, use a tripod. I-5

I-6



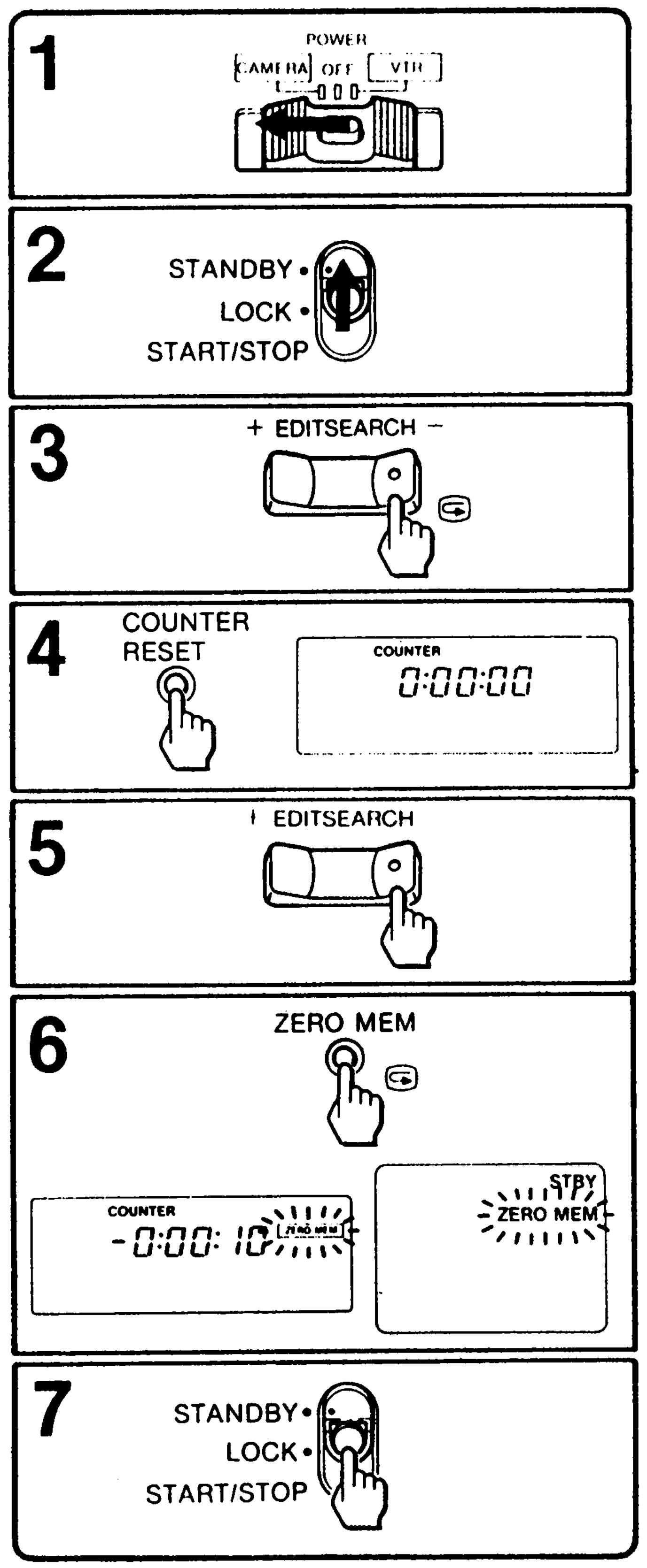
Frame Recording

A recording of six frames can be activated manually for creating an animated program of your own. I-6

1 While pressing the small button, set the POWER switch to CAMERA, and +VTR switch in the direction of the arrow.
2 Slide the REC switch in the direction of the arrow.
A recording of six frames will be made and the recording pause mode will resume.
3 Move the subject a little and repeat step 2 as many time as you like.

- For frame recording, signals from the VIDEO/AUDIO input jacks can be used. Set the POWER switch to VTR.

I-7



Editsearch

You can insert (record) video and audio simultaneously from the camera onto any recorded tape.

Operation I-7

Monitor the picture being inserted on the viewfinder screen.

1 While pressing the small button, set the POWER switch to CAMERA.
2 Slide the STANDBY switch up to set the unit to recording pause mode.
3 Keep pressing the "+" or "–" side of the EDITSEARCH button and release the button at the point where the insert should **end.**
The unit will be set to recording pause mode.
4 Display the counter in the display window and press the COUNTER RESET button.
The counter is reset to zero.
(For an accurate ending point, press the COUNTER RESET button immediately after the EDITSEARCH button is released and while the still picture is displayed.)
5 Keep pressing the "–" side of the EDITSEARCH button and release the button at the point where the insert should **begin.**
6 Press the ZERO MEM button.
The insert ending point is stored in memory.
7 Press the START/STOP button.
Insert recording will begin.

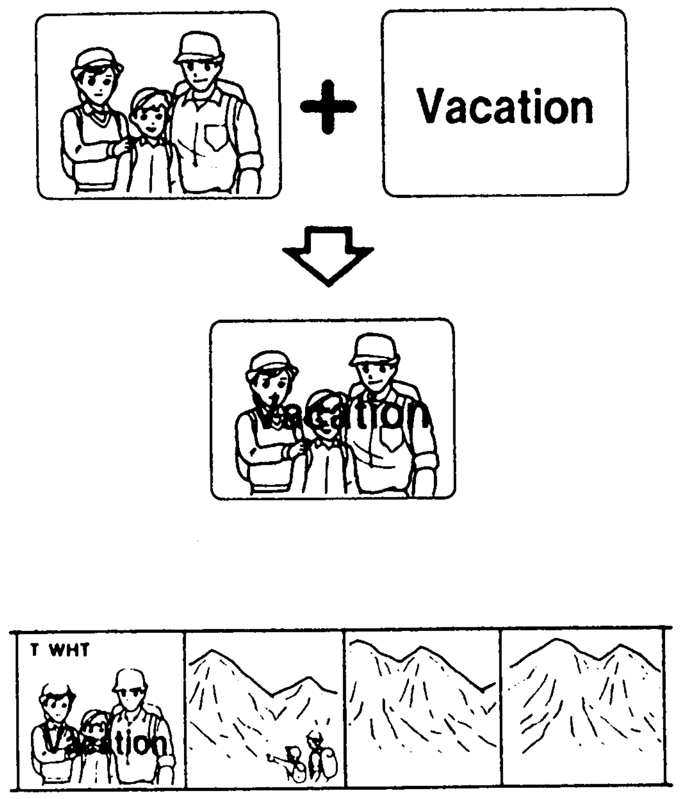
The insert recording will stop automatically near the counter zero point.

To cancel ZERO MEM mode
Press thee ZERO MEM button so that the ZERO MEM indicator disappears.

To change the insert ending point
Press the ZERO MEM button to turn off the ZERO MEM indicator and repeat steps 3 through 6 above.

To insert the date or time
Follow steps 1 through 6 above, press the DATE or TIME button to display the date or time indication on the viewfinder screen and then press the START/STOP button.

J-1



Recording a Title

Before recording, memorize a title or figure. The memorized title or figure is superimposed onto the picture being recorded. J-1

- Two kinds of titles or figures can be memorized.
- The color of the title or figure can be selected from 8 colors.

Make sure that the lithium battery is installed. See page 52.

Preparations

To make a desired title card

- Use a white and plane card and draw the title on it with a deep color (black is recommended for the best result) in thick letters.
  If contrast is clear, a signboard can be memorized like the title card.
- When deciding the title size, check the effective picture size on your video monitor.

Before memorizing a title

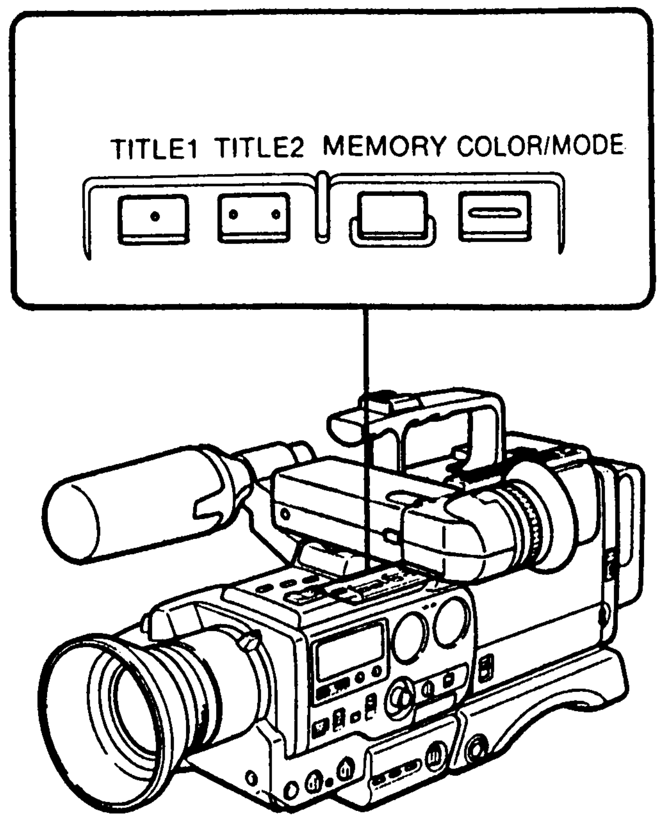
- Fix the title card and the video camera recorder.
- Use of an appropriate light is recommended for a better result.

Function of the COLOR/MODE button

This button is used to select the title color or title mode.

When the title is displayed	**When the title is not displayed**
Used as the COLOR button.	Used as the MODE button.
WHT (white) → BLUE → GRN (green) → CYAN → RED → VIO (violet) → YEL (yellow) → BLK (black) → WHT	No title mode → ↑ → T → T↑ → No title mode ↑: title scroll mode T: title reverse mode T↑: title reverse and scroll mode
Each push of the COLOR/MODE button cyclically changes the color or mode.	

J-2



Recording a Title

To Memorize the Title J-2

1. While pressing the small button, set the POWER switch to CAMERA.
2. Slide up the STANDBY switch to set the unit in the recording pause mode.
3. Point the camera to the title card and adjust the focus.
4. Press the TITLE 1 or 2 button.
5. Press the MEMORY button to memorize the title.
6. Select the title color while observing the color indication in the viewfinder. Each push of the COLOR/MODE button cyclically changes the color, as follows:

   WHT (white) → BLUE → GRN (green) → CYAN
   ↑ ↓
   BLK (black) ← YEL (yellow) ← VIO (violet) ← RED

7. Press the TITLE 1 or 2 button (pressed in step 4) to turn off the title.

Notes

- The color indication in the viewfinder is not recorded on the tapes.
- You can change the title color even after starting the recording.

To check the title

To check the memorized title, press the TITLE 1 or 2 button. To turn off the title, press the button again.

To Record the Title

To record the title from the beginning

Press the TITLE 1 or 2 button in recording pause mode, and then start recording.

To record during camera recording

Press the TITLE 1 or 2 button at the point from which the title is to be inserted. The memorized title will be recorded together with the picture.

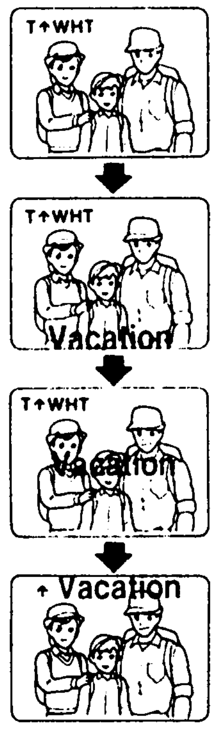
To stop recording the title

Press the TITLE 1 or 2 button again. The picture recording will continue.

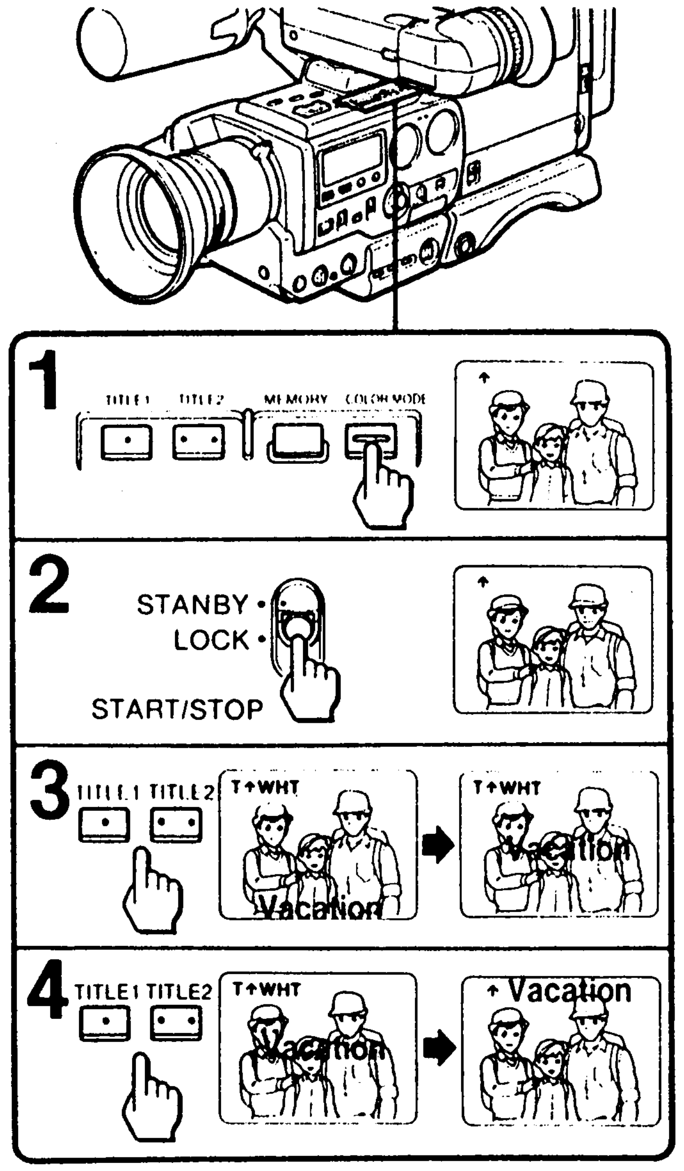
To record the same title several times

By repeating the above procedure, you can record the title as many times as desired.

J-3


T+WHT
T+WHT
Vacation
T+WHT
Vacation
Vacation

J-4


1
TITLE1
TITLE2
MEMORY
COLOR/MODE
2
STANBY
LOCK
START/STOP
3
TITLE1
TITLE2
T+WHT
Vacation
T+WHT
Vacation
4
TITLE1
TITLE2
T+WHT
Vacation
Vacation

To Scroll the Title from Bottom to Top

During recording, the memorized title can be scrolled from bottom to top. J-3

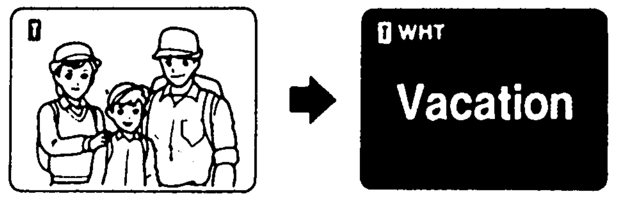
To record the scrolled title J-4
1 In the recording pause mode, press the COLOR/MODE button.
The arrow mark will be displayed.
2 Start the camera recording.
3 Press the TITLE 1 or 2 button at the point from which the scrolled title is to be recorded.
4 After the title stops at the center of the picture, press the TITLE 1 or 2 button again. The title is scrolled from center to top.

To clear the scroll mode
After recording, press the COLOR/MODE button **three times.**

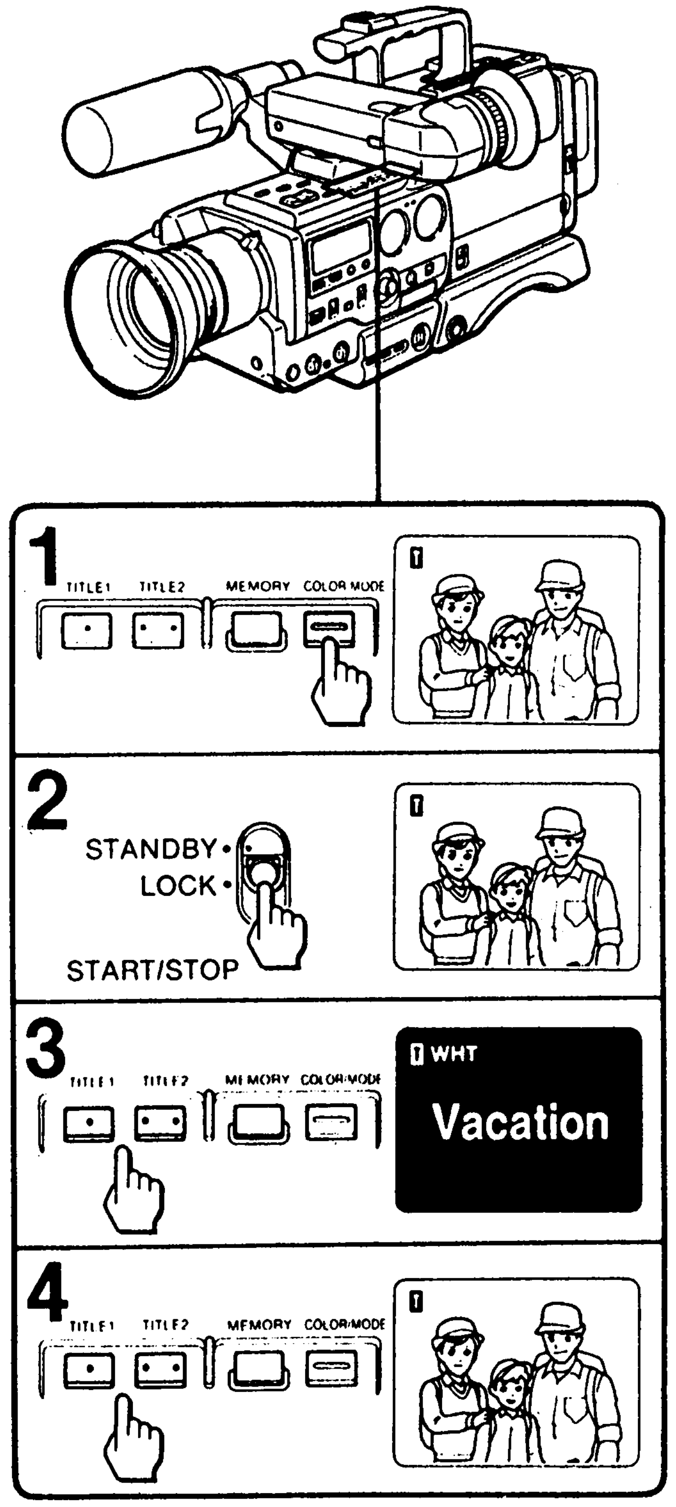
If you do not want to record the picture for the background
Point the recorder to a white, flat object such as a white wall, paper, etc.

To change the color of the title
While the title is being scrolled or displayed at the center, press the COLOR/MODE button.

J-5


WHT
Vacation

J-6


1
TITLE1
TITLE2
MEMORY
COLOR/MODE
2
STANDBY
LOCK
START/STOP
3
TITLE1
TITLE2
MEMORY
COLOR/MODE
WHT
Vacation
4
TITLE1
TITLE2
MEMORY
COLOR/MODE

To Reverse the Title and the Background

The color scheme of the title and the background can be reversed. J-5

To record the reversed picture from the beginning
1 In the recording pause mode, press the COLOR/MODE button **twice.**
The ▮ mark will be displayed.
2 Press the TITLE 1 or 2 button.
3 Start the camera recording.
4 Press the TITLE 1 or 2 button again to clear the reversed picture.

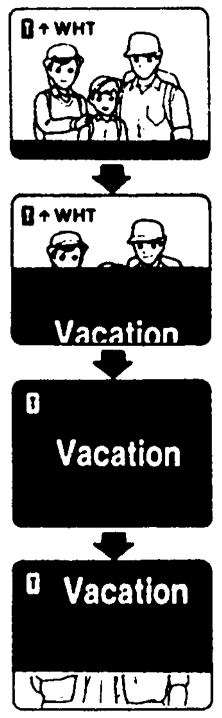
To record the reversed picture during recording J-6
1 In the recording pause mode, press the COLOR/MODE button **twice.**
The ▮ mark will be displayed.
2 Start the camera recording.
3 Press the TITLE 1 or 2 button at the point from which the reversed picture is to be recorded.
4 Press the TITLE 1 or 2 button again to clear the reversed picture.

To clear the reverse mode
After recording, press the COLOR/MODE button **twice.**

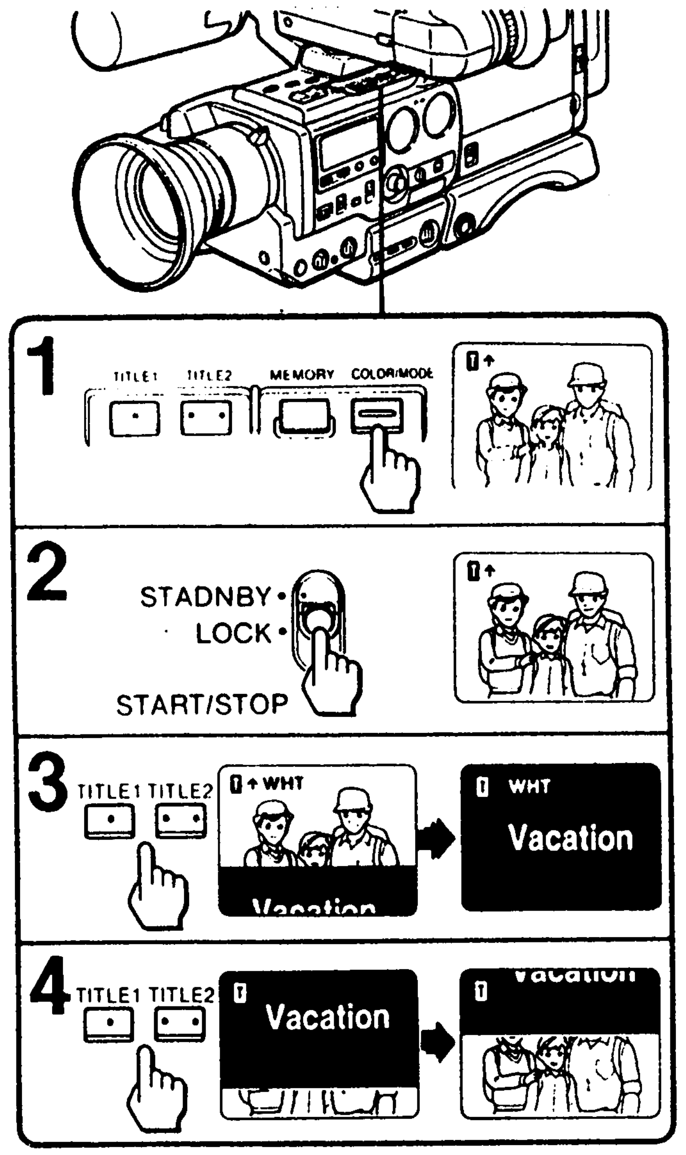
If you do not want to record the picture for the background
Point the recorder to a white, flat object such as a white wall, paper, etc.

To change the color of the background
While the title is being displayed, press the COLOR/MODE button.

J-7



J-8



Recording a Title

To Scroll the Reversed Title J-7

To record the reversed and scrolled title J-8

1 In the recording pause mode, press the COLOR/MODE button **three times.**
The arrow mark and the 🅃 mark will be displayed.
2 Start the camera recording.
3 Press the TITLE 1 or 2 button at the point from which the scrolled title is to be recorded.
4 After the reversed title stops at the center of the picture, press the TITLE 1 or 2 button again.
The reversed title is scrolled from center to top.

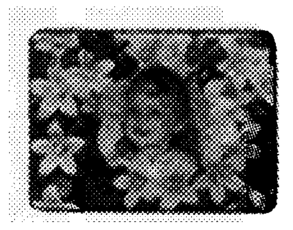
To clear the reversed scroll mode
After recording, press the COLOR/MODE button **once.**

If you do not want to record the picture for the background
Point the recorder to a white, flat object such as a white wall, paper, etc.

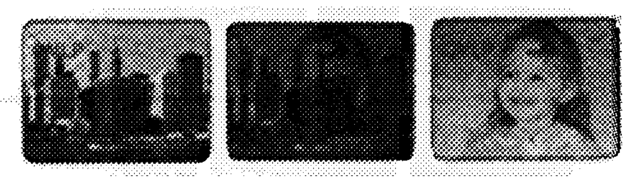
To change the color of the background
While the title is being scrolled or displayed at the center, press the COLOR/MODE button.

K-1

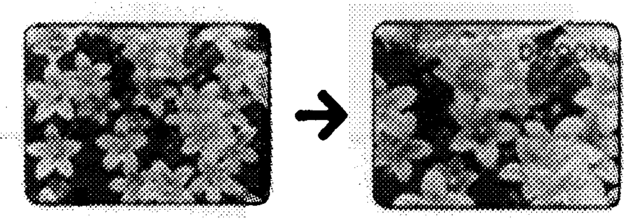
[a]



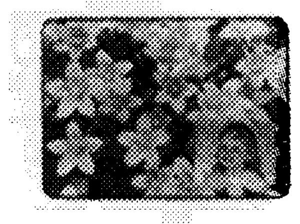
[b]



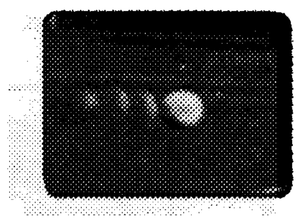
[c]



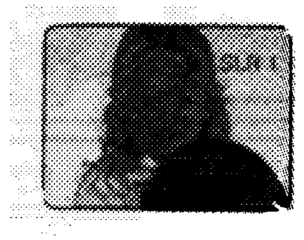
[d]



[e]



[f]



Viewing Digital Pictures

The digital picture function performs digital image processing of the recording or playback pictures and displays them on the screen with various effects.

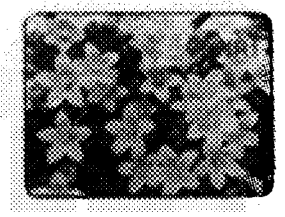
Digital Pictures Viewed with this Unit K-1

Display Page	Digital picture name	Operation		Page
		at camera recording	at playback	
[a]	**Digital still picture superimpose** A desired shaped picture can be recorded in the desired portion of the still picture.	Yes	No	(140)
[b]	**Overlap** The new scene appears and is recorded gradually on the last recorded scene.	Yes	No	(142)
[c]	**Digital zoom** The center portion of the picture is zoomed up twice.	Yes	Yes	(144)
[d]	**Picture in still** A small picture is displayed in the lower right position of the still picture and a new scene can be recorded there or the playback picture can be viewed.	Yes	Yes	(146)
[e]	**Strobe** The mooving white object is viewed with the after-image.	Yes	Yes	(148)
[f]	**Solarization** A picture with a solarization effect can be viewed.	Yes	Yes	(148)

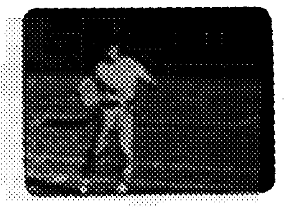
to be continued

K-2

[g]

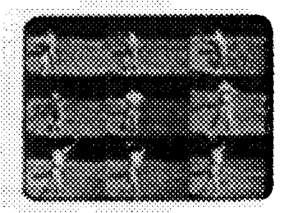


[h]



[i]

[j]



K-2

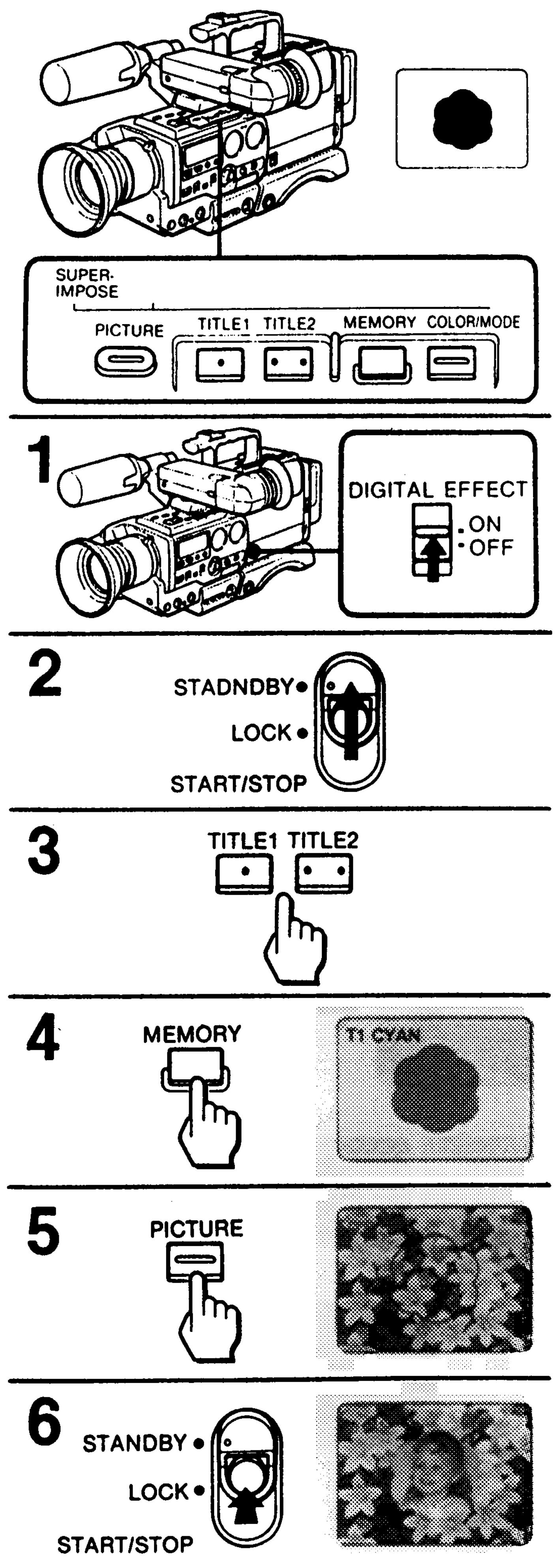
Display Page	Digital picture name	Operation		Page
		at camera recording	at playback	
[g]	**Noise reduction** A picture with noise reduced can be viewed.	Yes	Yes	(148)
[h]	**Stop motion** A still picture can be viewed.	Yes	Yes	(150)
[i]	**Flash motion** The picture freezes, and after a given period of time the next still picture can be viewed.	Yes	Yes	(150)
[j]	**Multi-picture** 9 frame pictures can be viewed. A still picture appears up to 8 frames succesively at specific intervals and the normal playback or recording is continued on the last section.	Yes	Yes	(150)

Using with the title operation
During the digital picture operation, the memorized title will be superimposed by pressing the TITLE (1 or 2) button.

Note on the digital picture
The color may vary.

Note on DIGITAL EFFECT switch
During recording, do not change the setting of the DIGITAL EFFECT switch. The switch will not function.

K-3



To Record a Desired Shaped Picture in the Desired Portion of the Still Picture

— Digital Still Picture Superimpose

This function can be operated at camera recording (At playback, it cannot be operated.)

Before operation, draw the shape of the portion in which the picture is recorded (pattern) with a deep color in thick letters. (See "To make a desired title card" on page 126.)
K-3

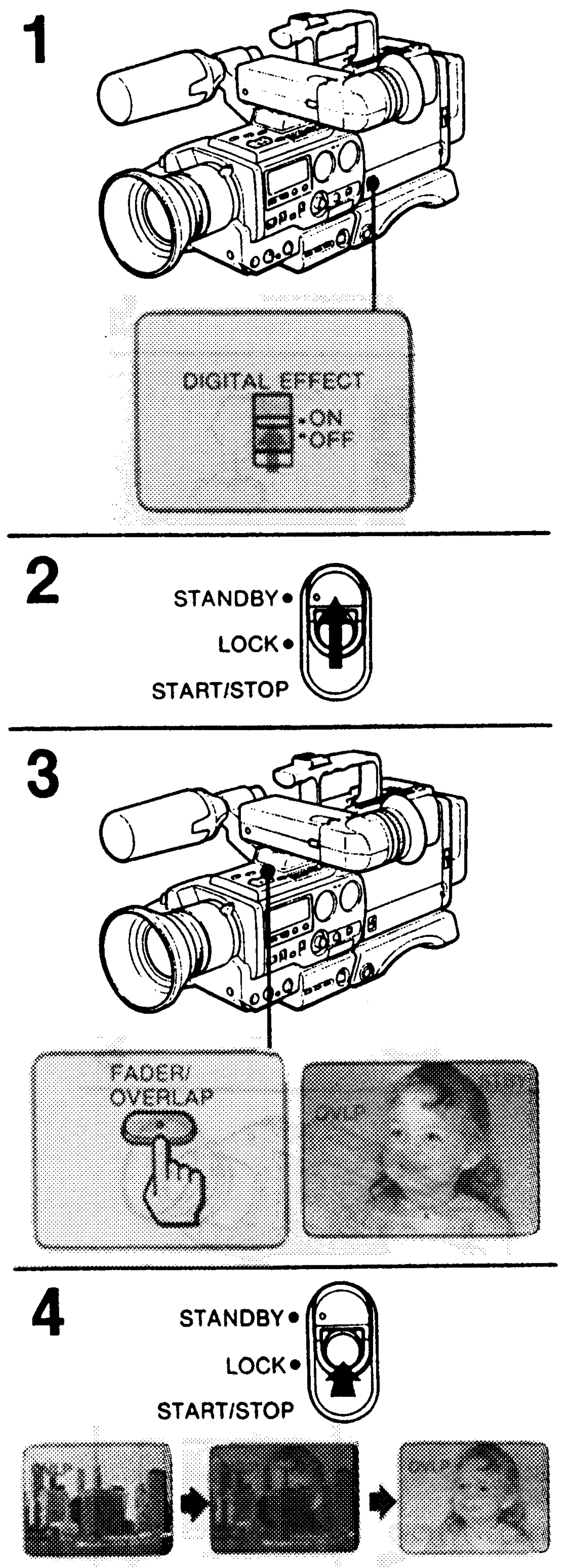
1 Set the DIGITAL EFFECT switch to ON.
2 Set the recorder in the recording pause mode.
3 Press the TITLE 1 (or 2) button.
4 Memorize the pattern.
5 Point the recorder to the subject for the still picture and press the PICTURE button. The portion except the pattern will be frozen.
6 Start recording. The picture will be recorded in the memorized pattern.

To stop the digital still picture superimpose
Press the PICTURE button again or the CLEAR button (on the side panel). The still picture will be cleared and the normal recording will be continued.

To make the pattern
A print or signboard with strong contrast can be memorized for the pattern.
The portion of low saturation will be memorized for the pattern.
By using the title reverse function, the portion of high saturation will be memorized for the pattern.

Note
When other digital picture button is pressed, the digital still picture superimpose function will be cleared.

K-4



To Record a New Scene Gradually from the Last Recorded Scene

— Overlap K-4

This function can be operated at camera recording (At playback, it cannot be operated.)

1 Set the DIGITAL EFFECT switch to ON.
2 After recording the scene to be overlapped, set the recorder in the recording pause mode.
3 Press the FADER/OVERLAP button **twice**.
4 Start recording.

To stop the overlap before operation
Press the FADER/OVERLAP button **once**.

After the overlap is executed
The overlap function will be cleared automatically.

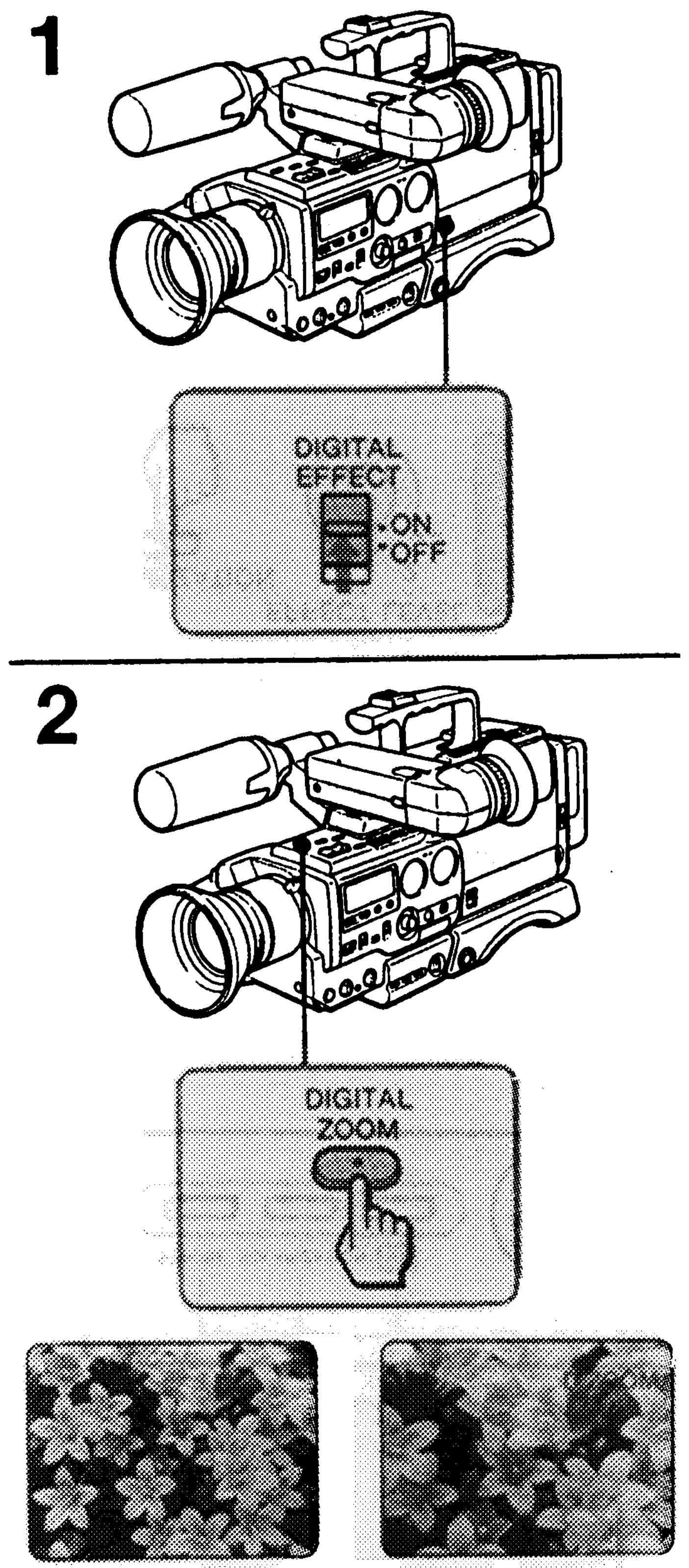
The OVLP indication will blink inside the viewfinder in the following cases
- The DIGITAL EFFECT switch has been set to ON during recording.
- Other digital picture button has been pressed.

When the OVLP indication blinks, the overlap function cannot be used.
To operate the overlap function, find the last scene with the EDITSEARCH button and then press the FADER/OVERLAP button **twice**.

To overlap on a scene of the recorded tape
1 Set the DIGITAL EFFECT switch to ON.
2 Set the recorder in the recording pause mode by sliding the STANDBY switch up.
3 Find the last scene to be overlapped with the EDITSEARCH button.
4 Press the FADER/OVERLAP button **twice**.
5 Start recording.

Notes
- When other digital picture button is pressed, the overlap function will be cleared.
- When the START/STOP button is pressed, the picture may be disturbed momentarily. This is not a failure of the unit.

K-5



To Zoom up the Center Portion of the Picture Twice

— Digital Zoom K-5

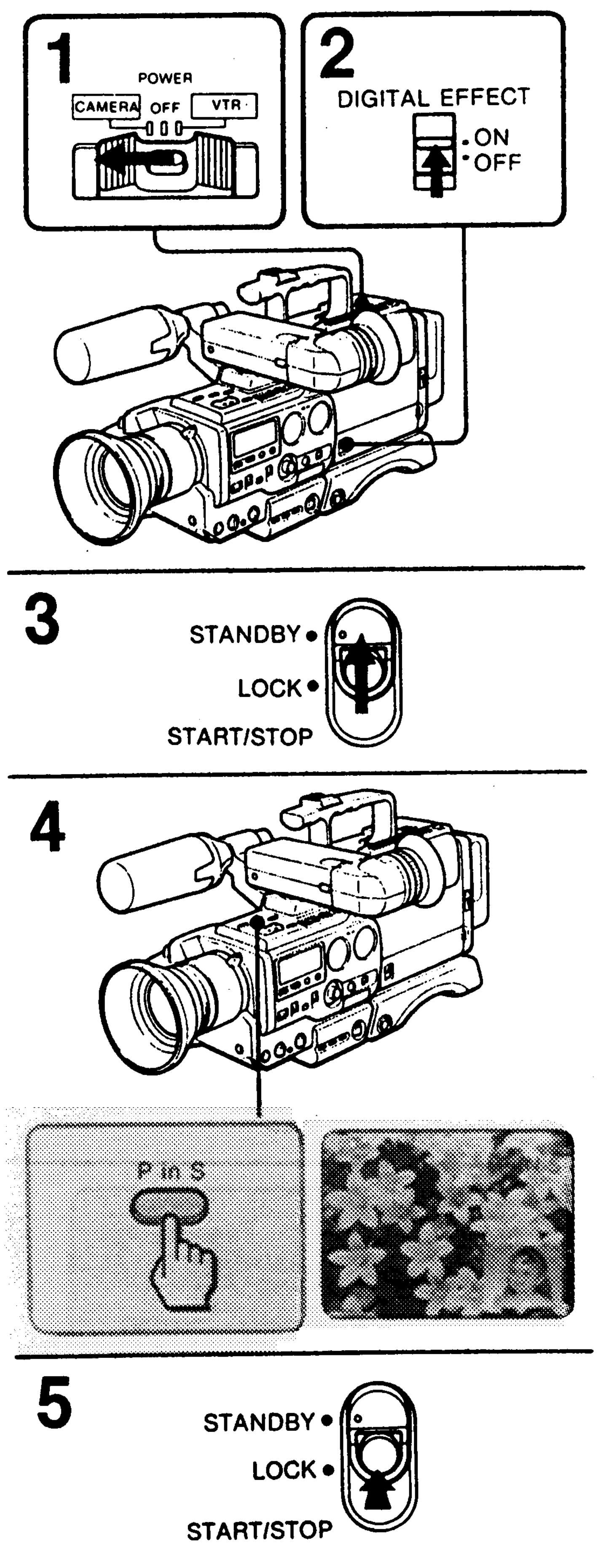
To zoom up during recording
Set the POWER switch to CAMERA.
1 Set the DIGITAL EFFECT switch to ON.
2 During recording, press the DIGITAL ZOOM button at the point where you zoom up the subject.

To zoom up during playback
1 Set the POWER switch to VTR and play back the tape.
2 Set the DIGITAL EFFECT switch to ON.
3 During playback, press the DIGITAL ZOOM button at the point of the subject where you want to zoom up.

When the picture which is zoomed up twice at camera recording is zoomed up twice by pressing the ZOOM button at playback, you can view the picture four time as large as that of the real subject.

To stop the digital zoom
Press the DIGITAL ZOOM button again or the CLEAR button (on the side panel).

K-6


1
POWER
CAMERA
OFF
VTR
2
DIGITAL EFFECT
ON
OFF
3
STANDBY
LOCK
START/STOP
4
P in S
5
STANDBY
LOCK
START/STOP

To Record a New Scene or View the Playback Picture in the Small Picture in the Still Picture

— Picture in Still

To record a small new scene in the still picture K-6

1. Set the POWER switch to CAMERA.
2. Set the DIGITAL EFFECT switch to ON.
3. Set the recorder in the recording pause mode.
4. Point the camera towards the subject which you want to make in the still picture and press the P in S button.
   The small picture will appear in the lower right position of the still picture.
5. Start recording.
   The new scene will be recorded in the small picture.

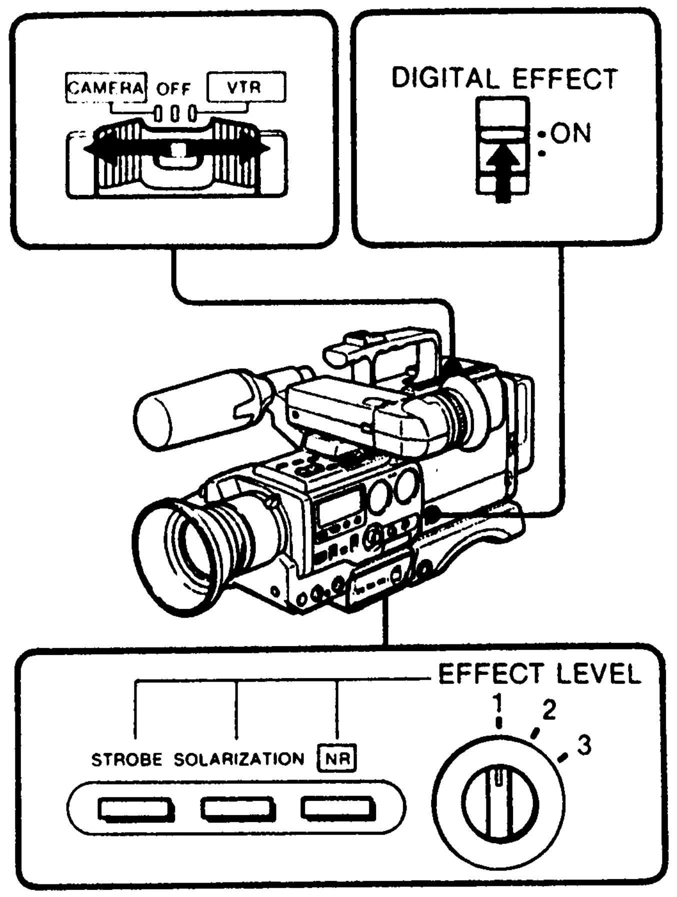
To view the small playback picture in the still picture

1. Set the POWER switch to VTR and play back the tape.
2. Press the P in S button in the desired scene.
   The scene when the P in S button is pressed will be frozen and the following scene will be viewed in the small picture.

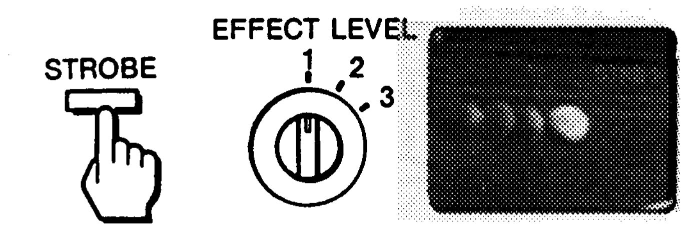
To stop the picture in still
Press the P in S button again or the CLEAR button (on the side panel). The small picture will be cleared and normal playback will be continued.

Note
When other digital picture button is pressed, the picture in still function will be released.

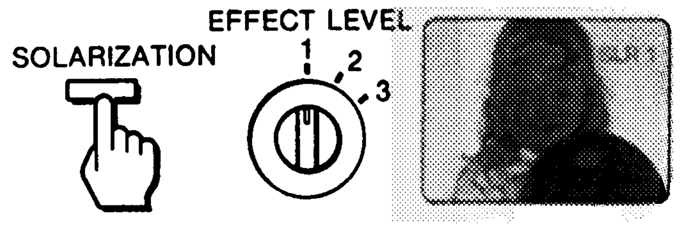
K-7


CAMERA
OFF
VTR
DIGITAL EFFECT
ON
EFFECT LEVEL
1
2
3
STROBE
SOLARIZATION
NR

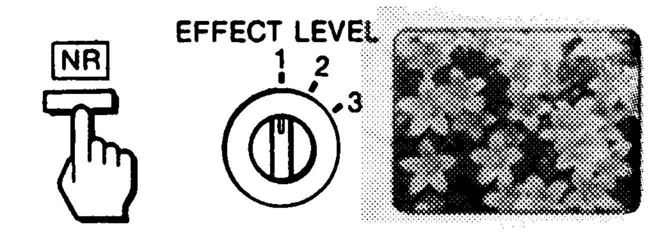
K-8


STROBE
EFFECT LEVEL
1
2
3

K-9


SOLARIZATION
EFFECT LEVEL
1
2
3

K-10


NR
EFFECT LEVEL
1
2
3

Strobe/Solarization/Noise Reduction K-7

This function can be operated at camera recording and at playback.
Set the POWER switch to CAMERA or VTR and set the DIGITAL EFFECT switch to ON.

To record or play back the moving white object with the after-image — Strobe K-8
Press the STROBE button.

The level of the strobe effect can be changed with the EFFECT LEVEL control.
When the EFFECT LEVEL control is set to 3, the level is increased to the maximum.

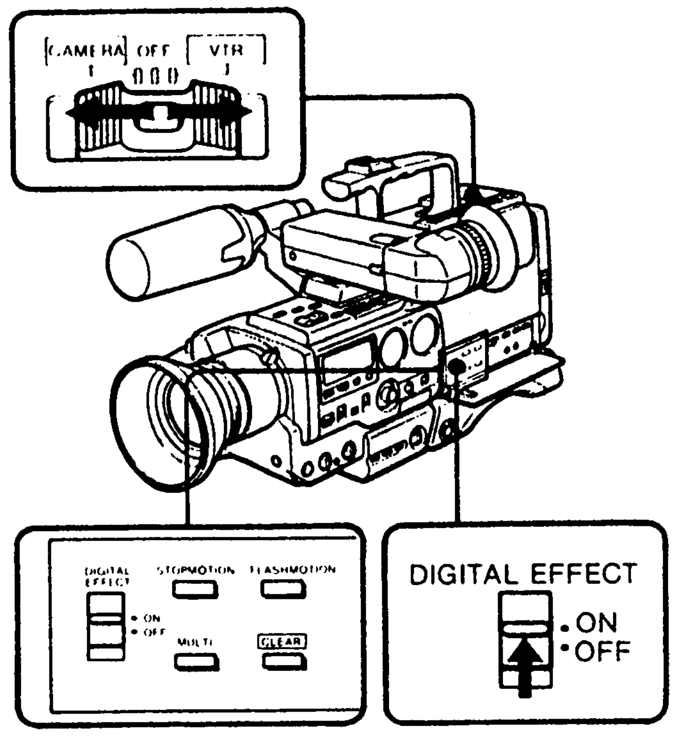
To record or play back a picture with a solarization effect — Solarization K-9
Press the SOLARIZATION button.

The level of the solarization effect can be changed with the EFFECT LEVEL control.
When the EFFECT LEVEL control is set to 3, the level is increased to the maximum.

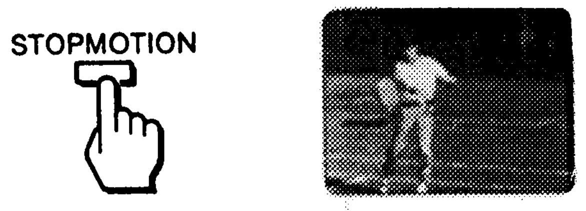
To record or play back a picture with reduced noise — Noise Reduction K-10
Press the NR button.

Set the EFFECT LEVEL control to change the effect.

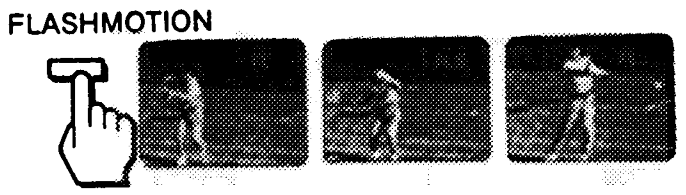
K-11



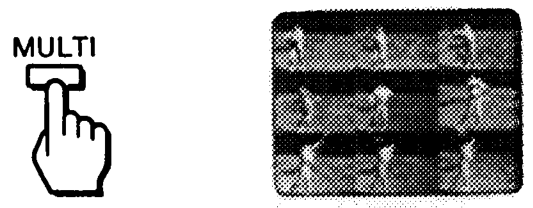
K-12



K-13



K-14



K-15

Viewing Digital Pictures

Stop Motion/Flash Motion/Multi-Picture

This function can be operated at camera recording and the playback.
Set the POWER switch to CAMERA or VTR and set the DIGITAL EFFECT switch to ON. K-11

To freeze a picture — Stop Motion
Press the STOPMOTION button. K-12

To record or play back still pictures successively at specific intervals — Flash Motion
Press the FLASHMOTION button. K-13

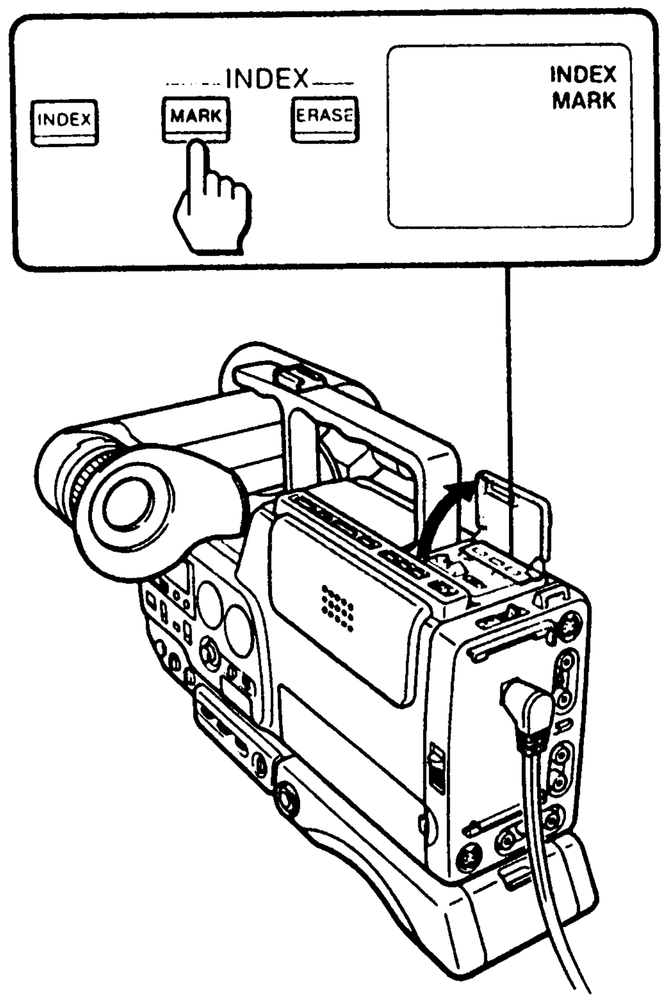
By pressing the FLASHMOTION button, the intervals at which the still picture is switched are changed.

To record or play back 9 frames picture on the screen — Multi-Picture
Press the MULTI button. K-14

To stop the digital picture K-15
Press the CLEAR button (on the side panel).

When other digital picture button is pressed, the function of the pressed button will work.

N-1



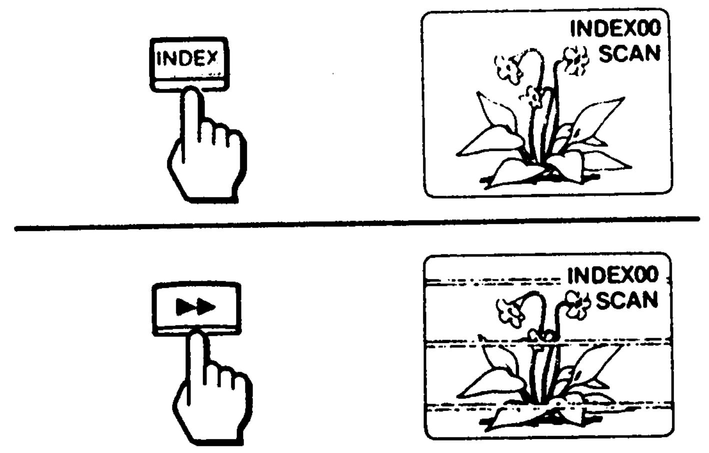
To Mark Index Signals during Playback

The desired programs can be easily located by the index signals marked on the tape.
Press the MARK button at any desired point on the tape during playback. N-1

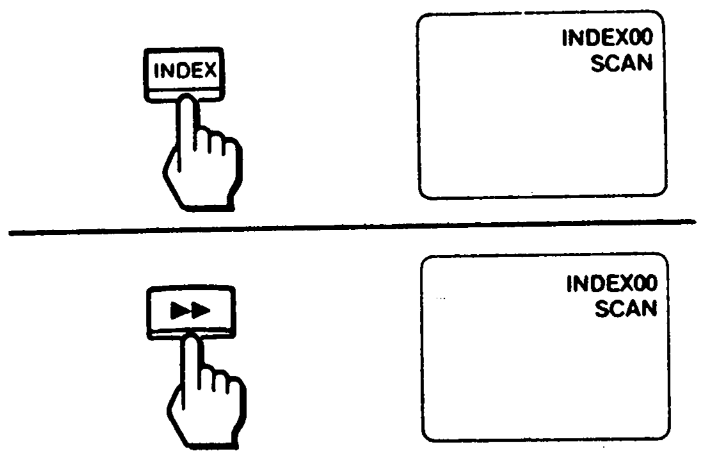
When the index signal is marked in the playback pause mode, the index signal will be marked just after the playback pause mode is released.

Notes on marking the index signals
- The index signals can be marked at any desired point. Make sure there is more than 2 minutes of space between two index signals. If there is more than one index signal marked within an interval of 2 minutes at the normal tape speed. the unit may not function properly.
- The recorded sound cannot be heard and a black bar appears at the bottom of the playback picture while the index signal is being marked during playback. However, the recorded signals are not affected.
- The index signals cannot be registered on a cassette tape whose safety tab is slid out.
- The index signals cannot be registered in the LP mode.

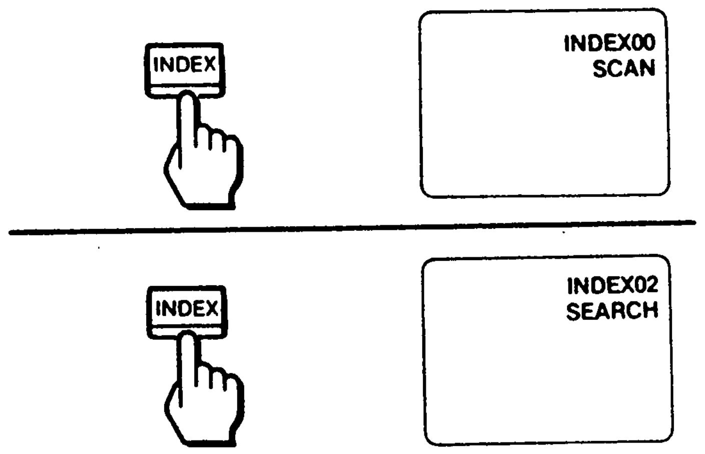
N-2



N-3



N-4



To Mark Index Signals during Playback

To Scan or Search the Program during Playback

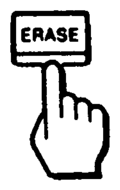
To scan the beginning of each program during monitoring the picture — Index scan (1) N-2
1 Press the INDEX button in the playback or playback pause mode.
2 Press the ◀◀ or ▶▶ button.
The tape is played back for approximately 10 seconds at the point where the index signal is marked.
3 To continue playback, press the ▷ button.
When no button is pressed, the picture is automatically scanned to the next or previous program.

To scan the beginning of each program in sequence — Index scan (2) N-3
1 Press the INDEX button in the stop mode.
2 Press the ◀◀ or ▶▶ button.
The tape is played back for approximately 10 seconds at the point where the index signal is marked.
3 Press the ▷ button to continue playing back the desired picture.
When no button is pressed, the picture is automatically scanned to the next or previous program.

To locate the desired program — Index search N-4
1 Press the INDEX button in the stop or playback mode.
2 Press the INDEX button again until the index number of the desired program is displayed on the viewfinder screen.
3 Press the ◀◀ or ▶▶ button.
The playback is started at the beginning of the designated picture.

To correct the index number
Press the ■ button and repeat the above steps.

N-5



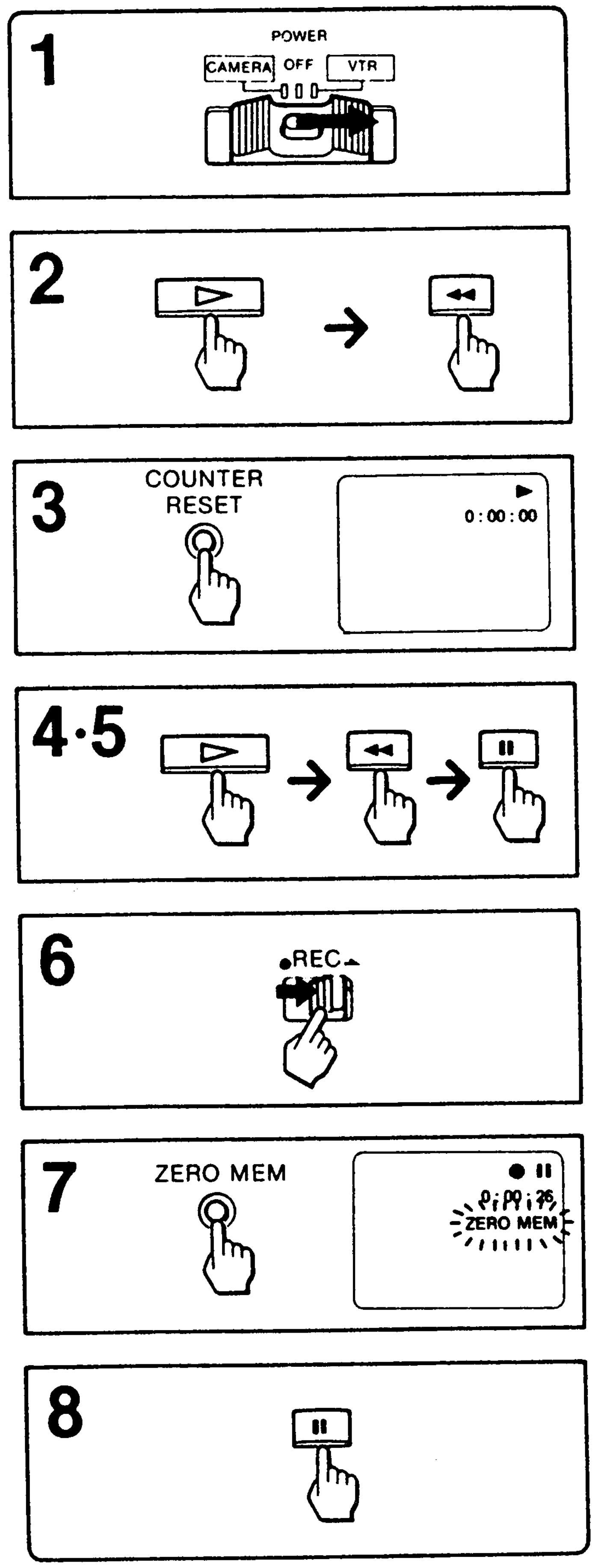
To Mark Index Signals during Playback

To Erase Index Signals N-5

1 Play back the beginning of the picture to be erased by index scan or index search.
2 Within approximatelly 10 seconds, while the tape is being played back, press the ERASE button.
When the index signal is erased while index scanning, the index scan is resumed.
When the index signal is erased while index searching, normal playback is begun.

Notes on erasing the index signal
- Press the ERASE button more than 2 seconds after the playback starts.
- If the safety tab on the cassette is slid out, the index signal cannot be erased.
- While an index signal is being erased, the recorded sound cannot be heard and a black bar appears at the bottom of the playback picture.
However, recorded signals are not affected.
- The index signal marked by a VCR such as the EV-S900 series can be detected with this unit but cannot be erased.
The index signal marked by this unit can be detected with a VCR such as the EV-S900 series but cannot be erased.
- When the audio is dubbed in the portion where the index signal is marked, the index signal may be erased.

0-4



Insert Recording

To Insert a Picture or a TV Program from Another VCR 0-4

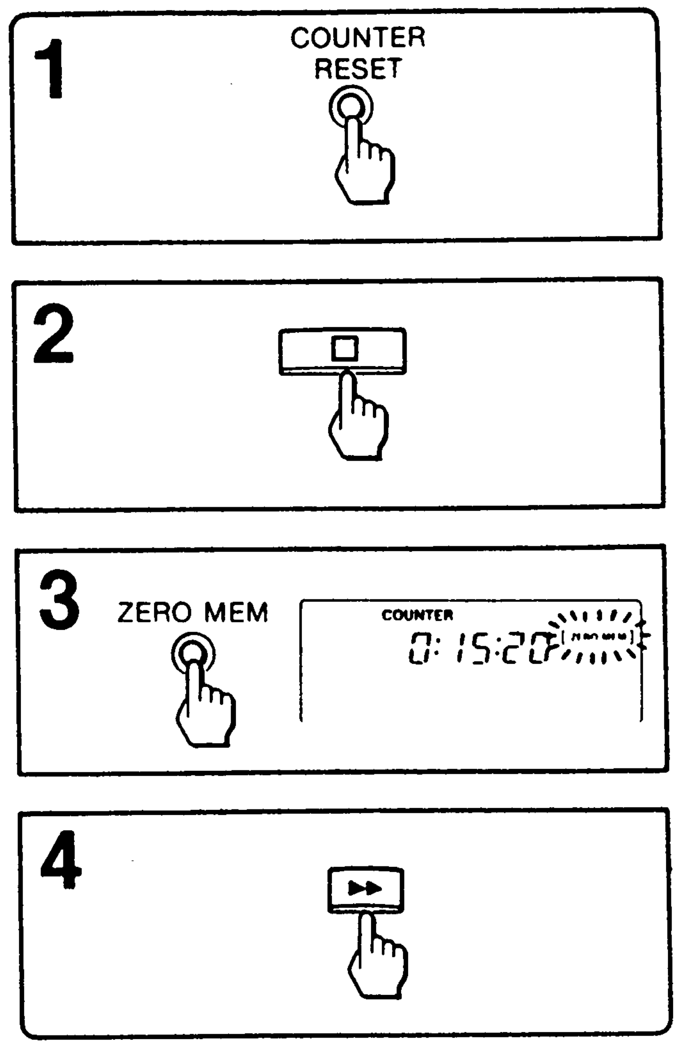
Monitor the picture being inserted on the viewfinder screen.

1 While pressing the small button, set the POWER switch to VTR.
2 Locate the point on the tape where the insert should end by pressing the ◀◀ or ▶▶ button during playback.
3 Display the counter in the display window and press the COUNTER RESET button. The counter is reset to zero.
4 Press the ◀◀ button during playback to rewind the tape a little further than the point where the insert should begin.
5 Release the ◀◀ button to resume playback and press the ❚❚ button at the insert starting point.
6 Slide the ● REC switch in the arrow direction to set the unit to recording pause mode.
7 Press the ZERO MEM button. The insert ending point is stored in memory.
8 To start recording, press the ❚❚ button.

The insert recording will stop automatically near the counter zero point.

To cancel ZERO MEM mode
Press the ZERO MEM button so that the ZERO MEM indicator disappears.

0-5



Use of the Tape Counter

During recording or playback, the digits on the counter indicate the actual recording or playback time.

To Index the Whole Tape

Press the COUNTER RESET button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

Notes on the counter
- The counter reading and the point of the tape may not correspond exactly. Use the counter as a guide.
- The counter does not operate for a blank, unrecorded portion of a tape.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations.
- There will be also a time lag of several seconds when the tape recorded in LP and SP modes mixed or the tape having a blank portion between the recorded portions is played back.

To Return to a Pre-registered Point 0-5

1 During recording or playback, press the COUNTER RESET button at the point you later want to locate.
2 Press the ■ button when the recording or playback has finished.
3 Press the ZERO MEM button. The "ZERO MEM" indicator will blink in the display window.
4 Press the ▶▶ or ◀◀ button. The tape will be rewound or sent forward and stop automatically when the counter reaches approximately zero.

Notes on ZERO MEM button
- The ZERO MEM button does not function during recording or playback mode.
- Be sure to press the ZERO MEM button when the tape is stopped.
- The ZERO MEM mode is cancelled automatically once the tape is rewound or sent forward to zero.

Trouble Indications

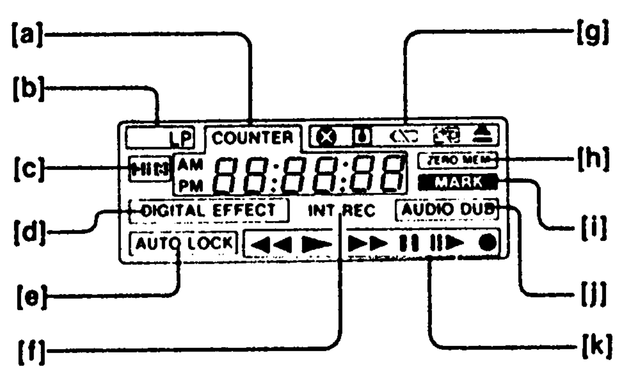
If an indication blinks in the viewfinder screen or a caution lamp on the main unit blinks, check the following table.

☐ slow blinking ☐ fast blinking

	Symptom	Cause	Corrective actions
Camera/ VTR	🔋	The battery is weak.	Prepare a charged one.
	🔋	The battery is used up.	Use a charged battery.
Camera	📼 ⏏	The tape is at its end.	Use a new tape.
	📼	The tape is near its end.	Prepare a new one.
	📼	No tape is inserted.	Insert a tape.
	📼 ⏏	The tab on the tape is out (red).	Slide the tab.
	☀	• The battery is removed for more than 1 hour. • Low light • The white balance is adjusted with a suitable other than white.	Adjust the white balance correctly.
Camera/ VTR	⏏ 💧	Moisture condensation has occurred.	Remove the tape and leave the recorder for at least an hour.
	● ⊗	The gap of the head is clogged.	Clean the head using the Sony V8-25CLH video head cleaning tape.
	⏏ ⊗	Other troubles may occur.	Consult your nearest Sony dealer.
	"AM 12:00:00" blinks for 5 seconds in the viewfinder after setting POWER to CAMERA. In the display window "0:00:00" or bar indication blinks.	The lithium battery is not installed. The lithium battery is exhausted.	Install the lithium battery.
	The current time blinks for 5 seconds in the viewfinder after setting POWER to CAMERA. In the display window the counter, date/time indication blinks.	The lithium battery is weak.	Use a new battery.

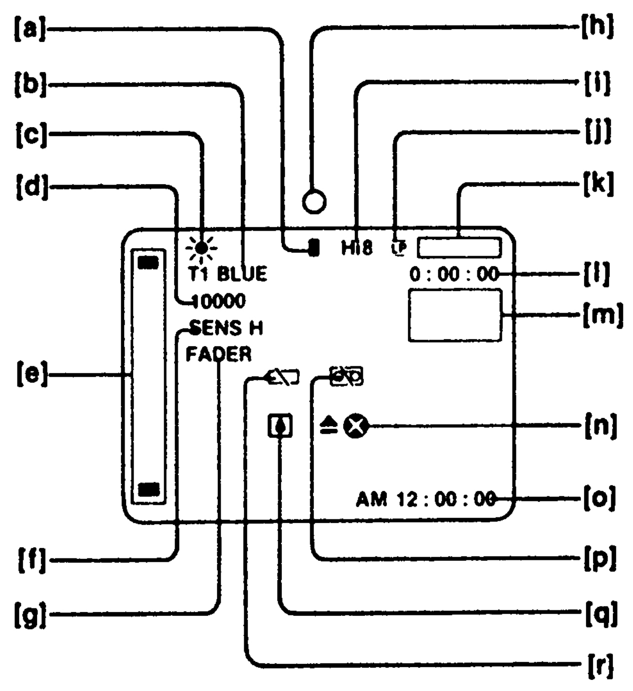
Trouble Indications

Indications in the Display Window



- [a] Time/date/counter indication
- [b] Tape speed indication
- [c] High eight mode indication
- [d] DIGITAL EFFECT indication
- [e] AUTO LOCK indication
- [f] Indicates during interval recording.
- [g] Caution indications
- [h] ZERO MEM (memory) indication
- [i] Lights when the index signal is marked.
- [j] Indicates during audio dubbing.
- [k] Shows the VCR operation mode.

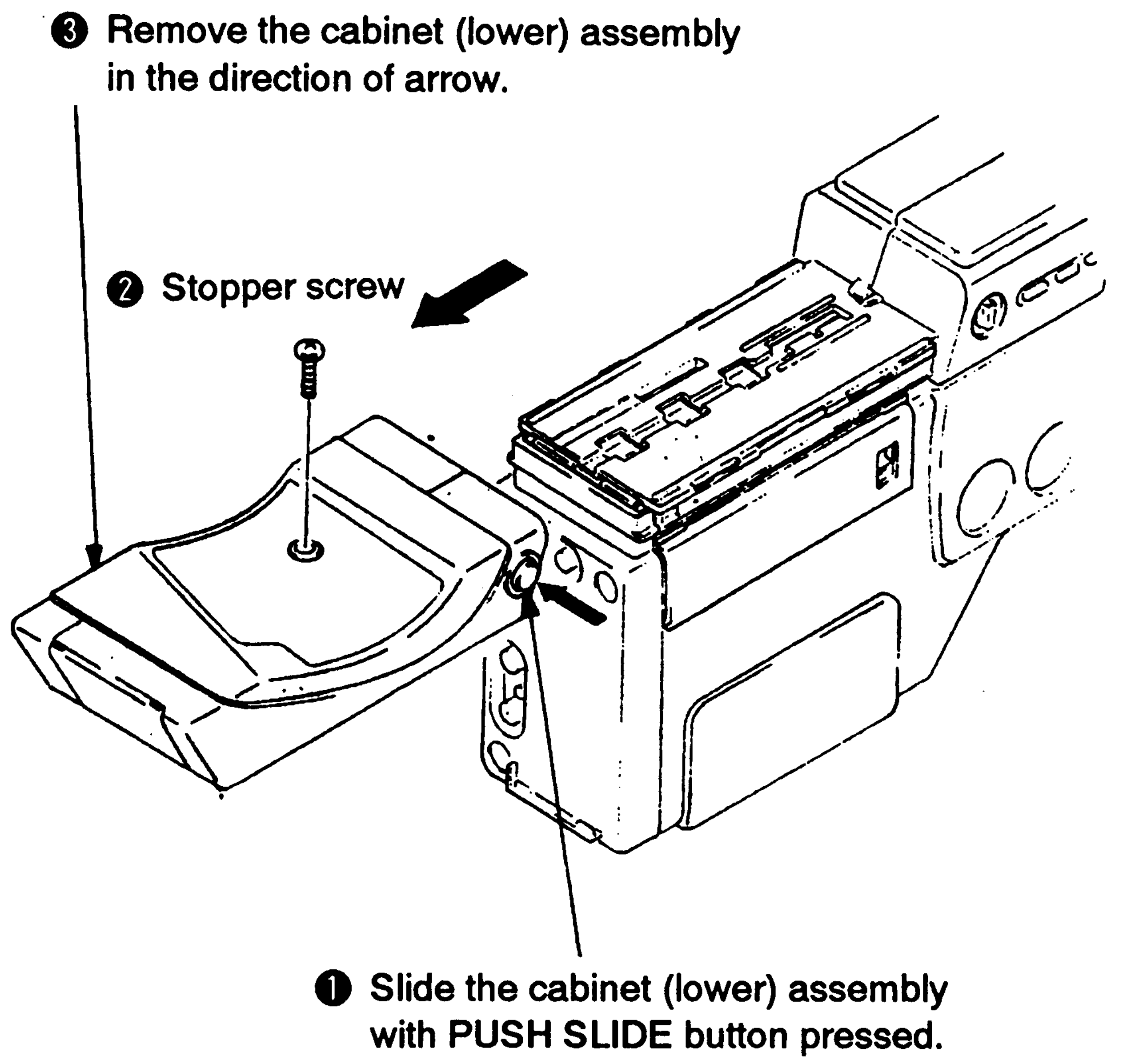
Indications inside the Viewfinder



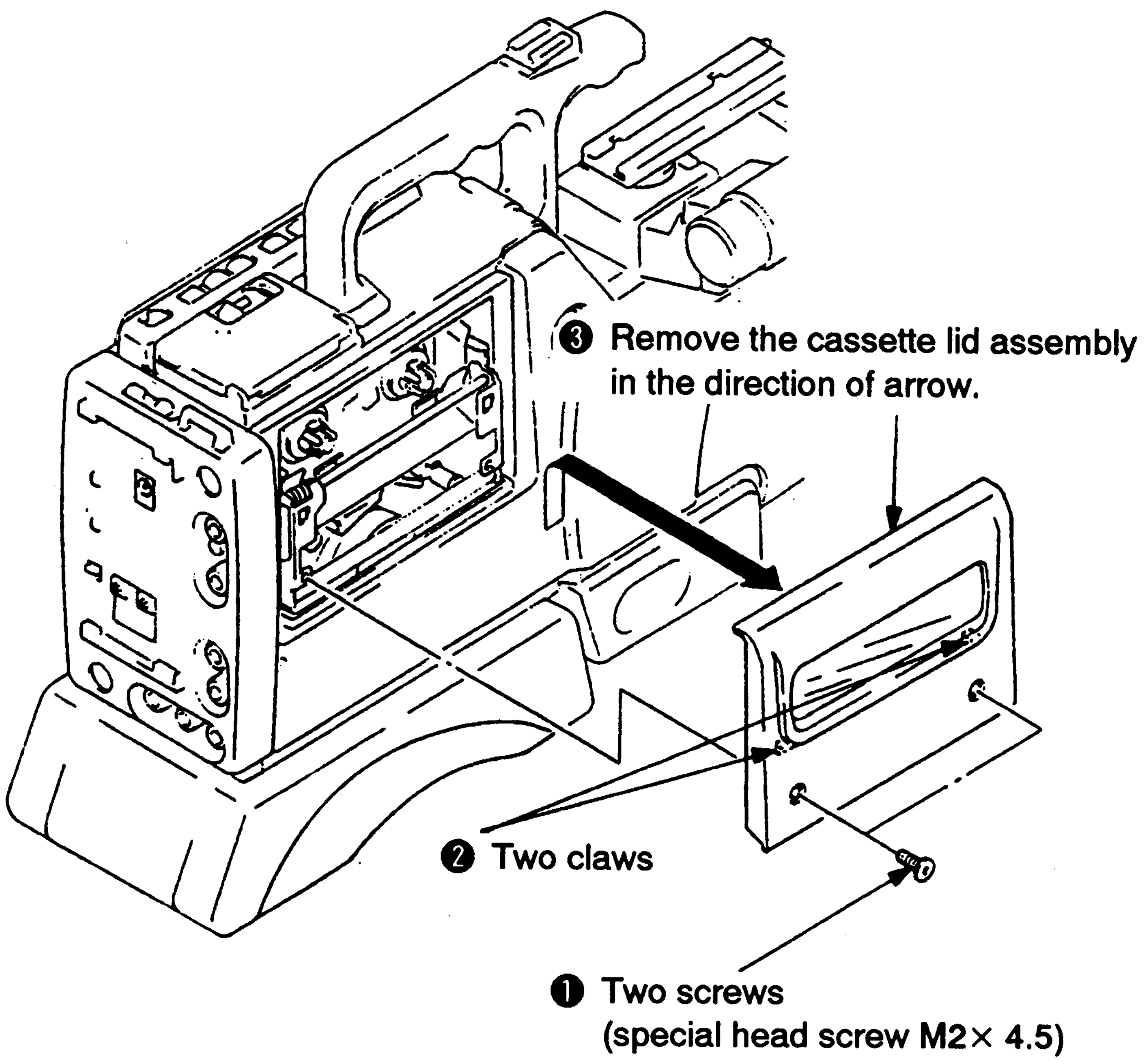
- [a] Lights when the focus is adjusted manually
- [b] Title number and color indication
- [c] Lights when the white balance is adjusted manually.
- [d] Shutter speed indication
- [e] Lights when the iris is controlled manually
- [f] Lights when the SENS button is pressed
- [g] FADER/OVERLAP indication
- [h] Camera recording lamp
- [i] High 8 mode indication
- [j] Indicates the playback mode (LP)
- [k] In the VCR operation mode, this indicates the tape transport function.
- [l] Tape counter
- [m] ZERO MEM/INDEX mode/digital picture mode indication
- [n] Caution indication
- [o] Date/time
- [p] Tape indication
- [q] Dew indication
- [r] Battery indication

SECTION 2
DISASSEMBLY

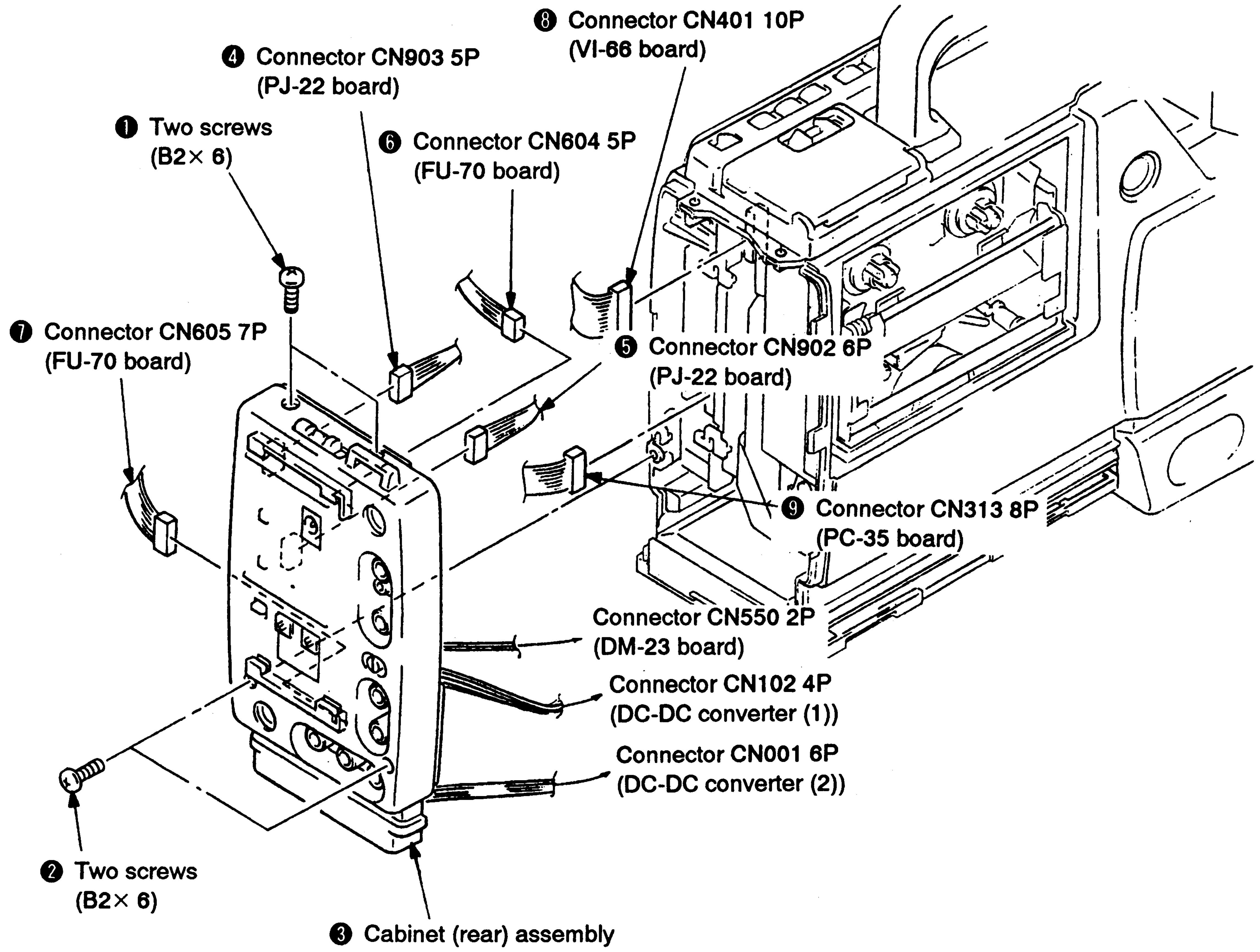
2-1. REMOVAL OF CABINET (LOWER) ASSEMBLY


③ Remove the cabinet (lower) assembly in the direction of arrow.
② Stopper screw
① Slide the cabinet (lower) assembly with PUSH SLIDE button pressed.

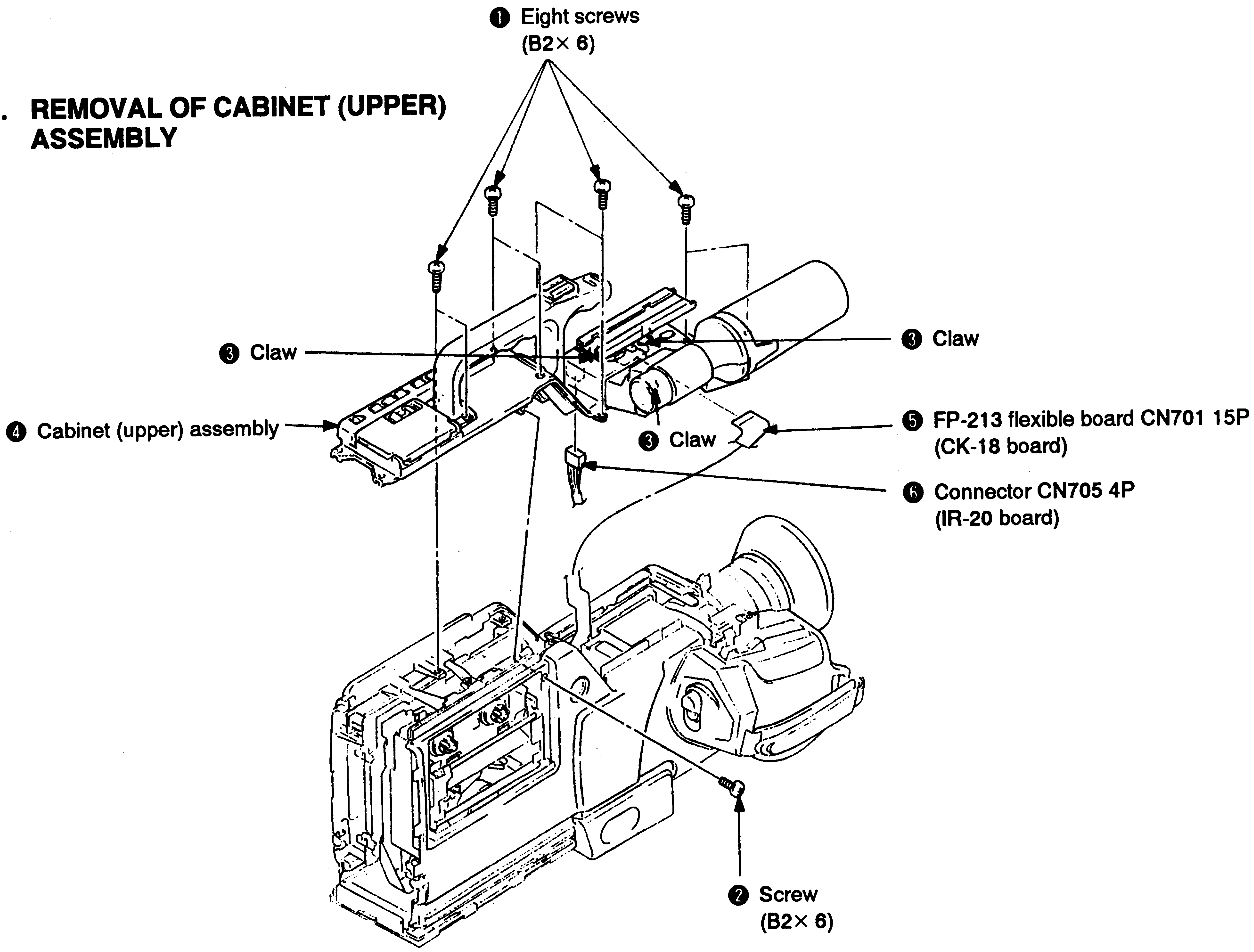
2-2. REMOVAL OF CASSETTE LID ASSEMBLY


③ Remove the cassette lid assembly in the direction of arrow.
② Two claws
① Two screws (special head screw M2× 4.5)

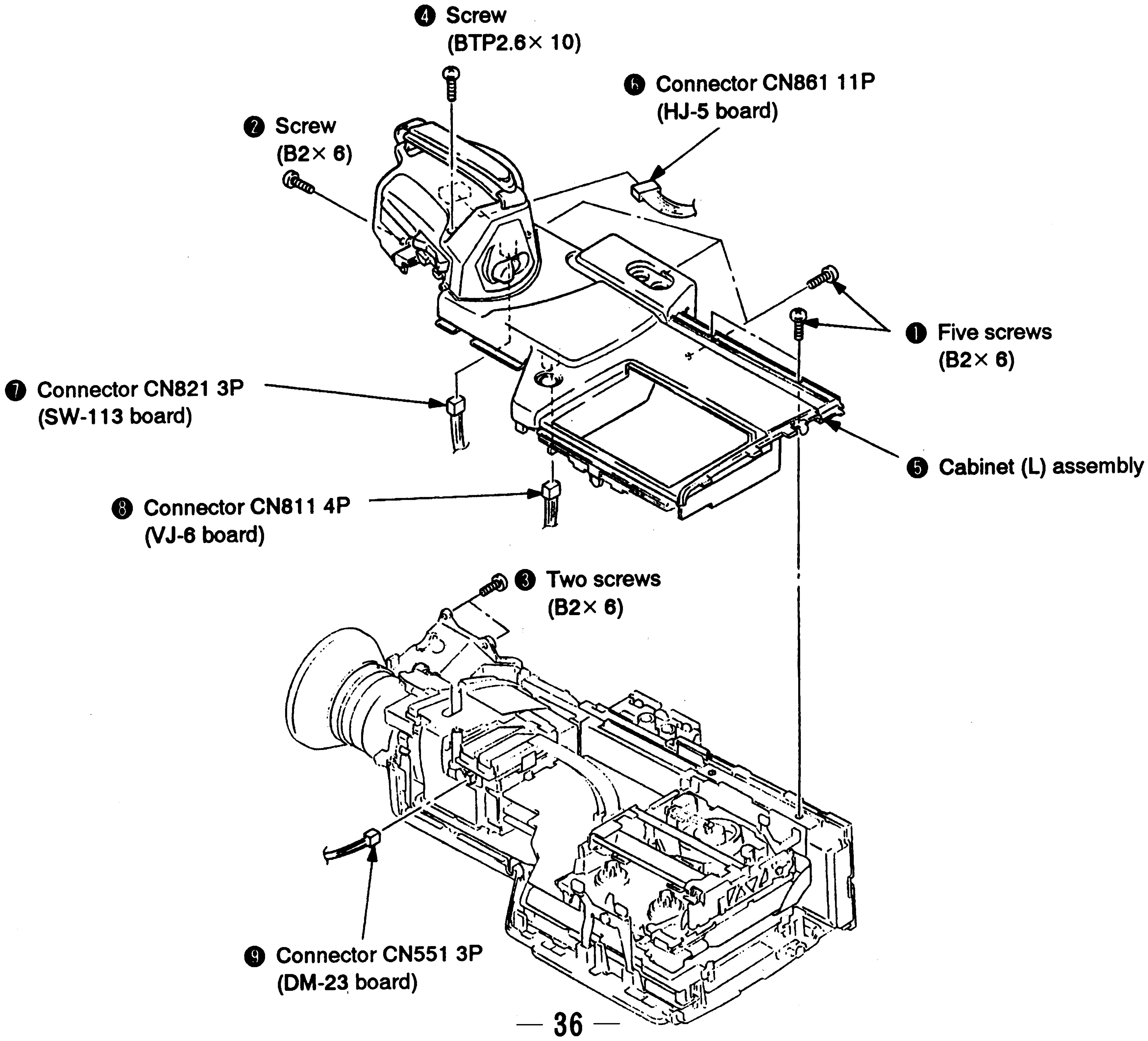
2-3. REMOVAL OF CABINET (REAR) ASSEMBLY


⑧ Connector CN401 10P (VI-66 board)
④ Connector CN903 5P (PJ-22 board)
① Two screws (B2× 6)
⑥ Connector CN604 5P (FU-70 board)
⑦ Connector CN605 7P (FU-70 board)
⑤ Connector CN902 6P (PJ-22 board)
⑨ Connector CN313 8P (PC-35 board)
Connector CN550 2P (DM-23 board)
Connector CN102 4P (DC-DC converter (1))
Connector CN001 6P (DC-DC converter (2))
② Two screws (B2× 6)
③ Cabinet (rear) assembly

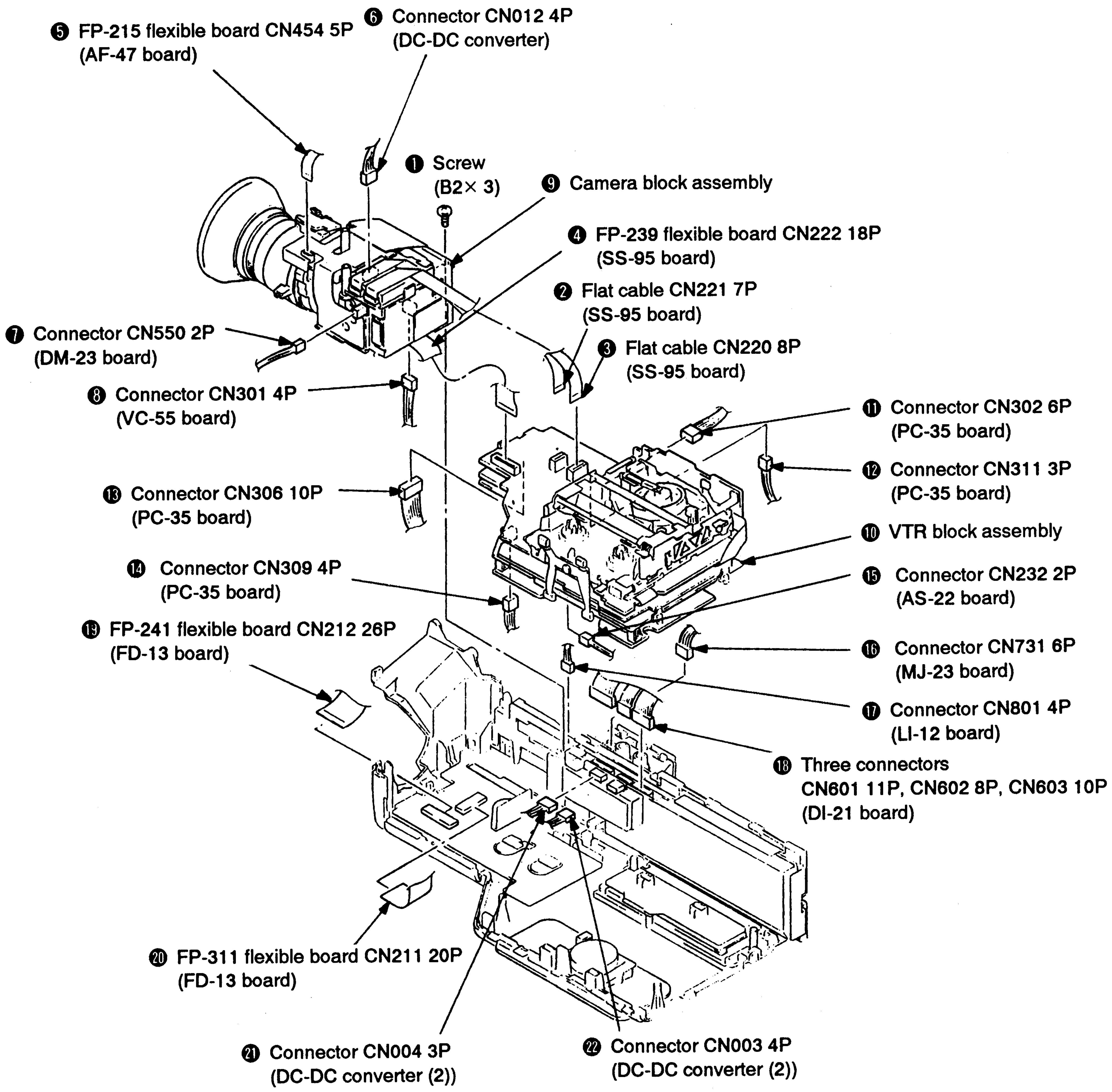
2-4. REMOVAL OF CABINET (UPPER) ASSEMBLY


❶ Eight screws (B2× 6)
❸ Claw
❸ Claw
❹ Cabinet (upper) assembly
❸ Claw
❺ FP-213 flexible board CN701 15P (CK-18 board)
❻ Connector CN705 4P (IR-20 board)
❷ Screw (B2× 6)

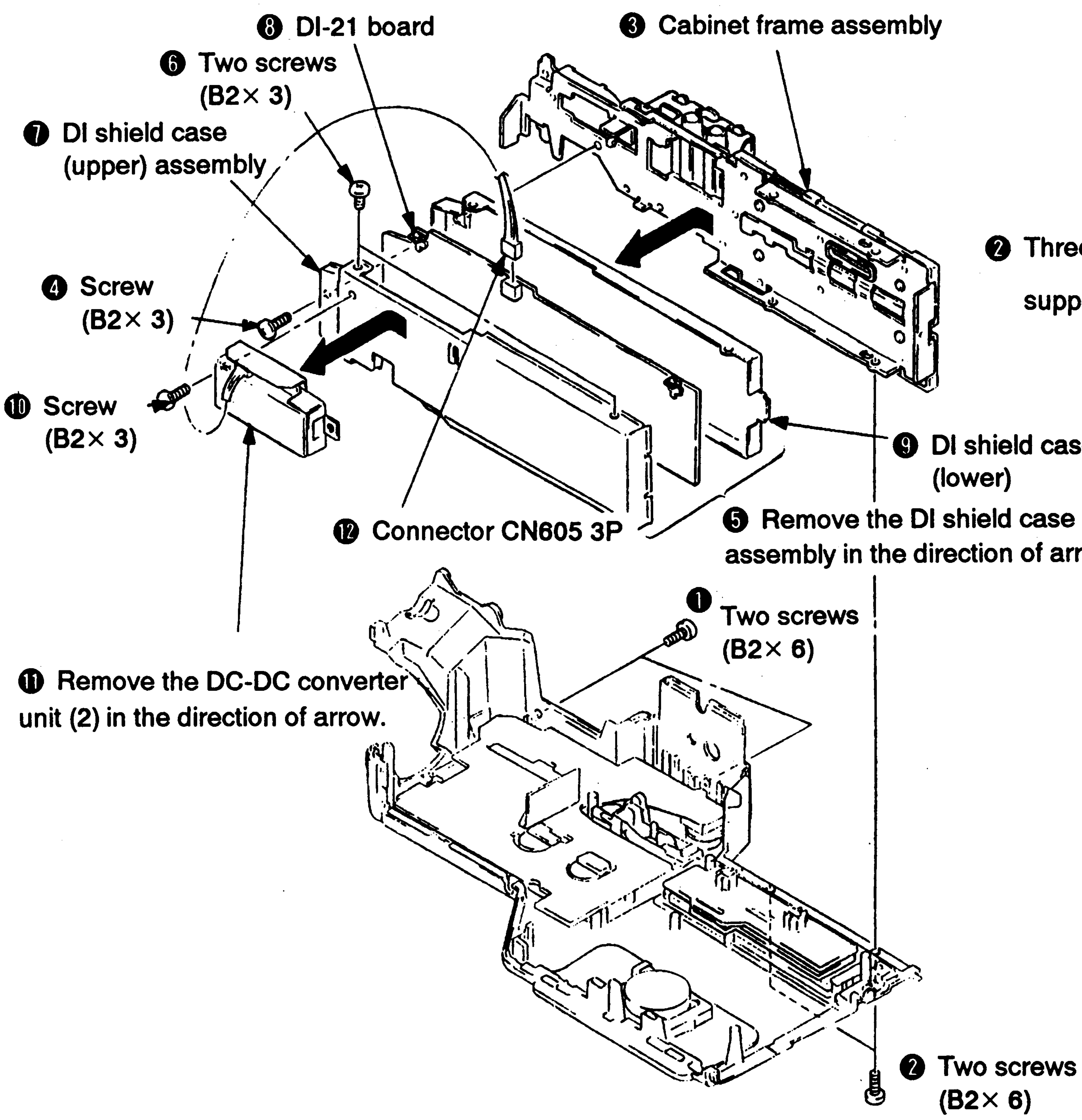
2-5. REMOVAL OF CABINET (L) ASSEMBLY


❹ Screw (BTP2.6× 10)
❻ Connector CN861 11P (HJ-5 board)
❷ Screw (B2× 6)
❶ Five screws (B2× 6)
❼ Connector CN821 3P (SW-113 board)
❺ Cabinet (L) assembly
❽ Connector CN811 4P (VJ-6 board)
❸ Two screws (B2× 6)
❾ Connector CN551 3P (DM-23 board)

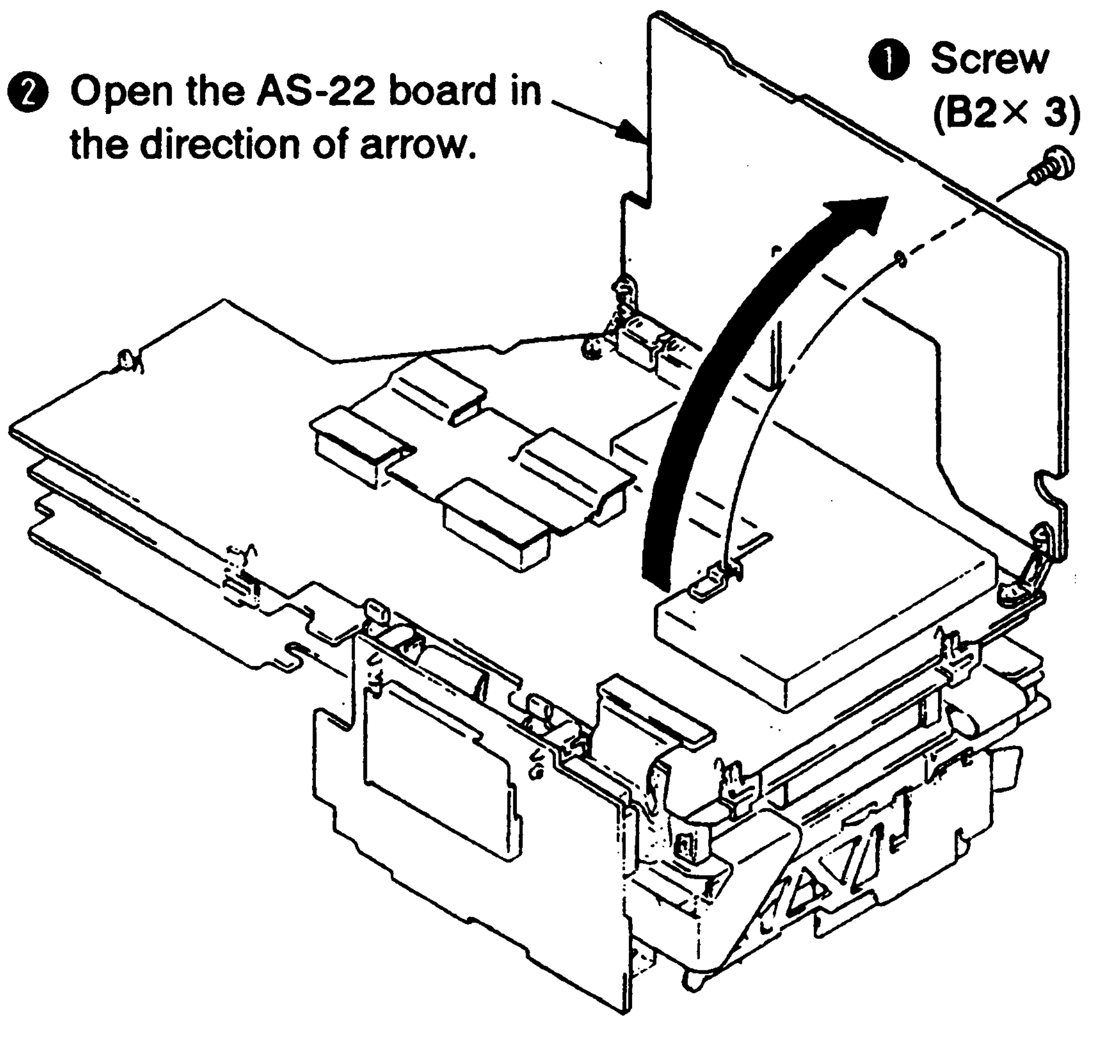
2-6. REMOVAL OF CAMERA BLOCK ASSEMBLY AND VTR BLOCK ASSEMBLY


❺ FP-215 flexible board CN454 5P (AF-47 board)
❻ Connector CN012 4P (DC-DC converter)
❶ Screw (B2× 3)
❾ Camera block assembly
❹ FP-239 flexible board CN222 18P (SS-95 board)
❷ Flat cable CN221 7P (SS-95 board)
❼ Connector CN550 2P (DM-23 board)
❸ Flat cable CN220 8P (SS-95 board)
❽ Connector CN301 4P (VC-55 board)
⓫ Connector CN302 6P (PC-35 board)
⓬ Connector CN311 3P (PC-35 board)
⓭ Connector CN306 10P (PC-35 board)
❿ VTR block assembly
⓮ Connector CN309 4P (PC-35 board)
⓯ Connector CN232 2P (AS-22 board)
⓳ FP-241 flexible board CN212 26P (FD-13 board)
⓰ Connector CN731 6P (MJ-23 board)
⓱ Connector CN801 4P (LI-12 board)
⓲ Three connectors CN601 11P, CN602 8P, CN603 10P (DI-21 board)
⓴ FP-311 flexible board CN211 20P (FD-13 board)
㉑ Connector CN004 3P (DC-DC converter (2))
㉒ Connector CN003 4P (DC-DC converter (2))

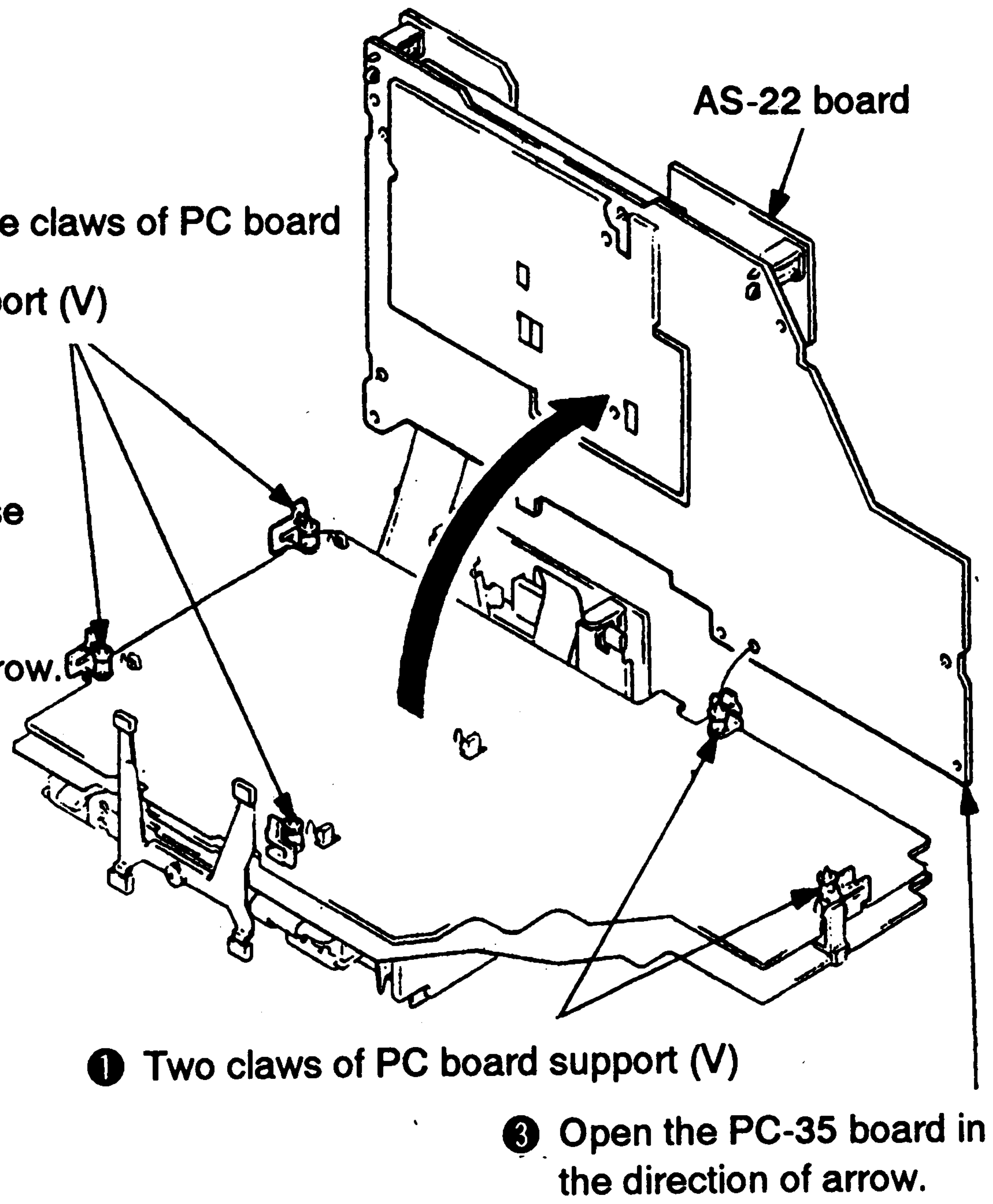
2-7. REMOVAL OF CABINET FRAME ASSEMBLY (DC-DC CONVERTER UNIT)


❽ DI-21 board
❸ Cabinet frame assembly
❻ Two screws (B2× 3)
❼ DI shield case (upper) assembly
❹ Screw (B2× 3)
❿ Screw (B2× 3)
❾ DI shield case (lower)
⓬ Connector CN605 3P
❺ Remove the DI shield case assembly in the direction of arrow.
❶ Two screws (B2× 6)
⓫ Remove the DC-DC converter unit (2) in the direction of arrow.
❷ Two screws (B2× 6)

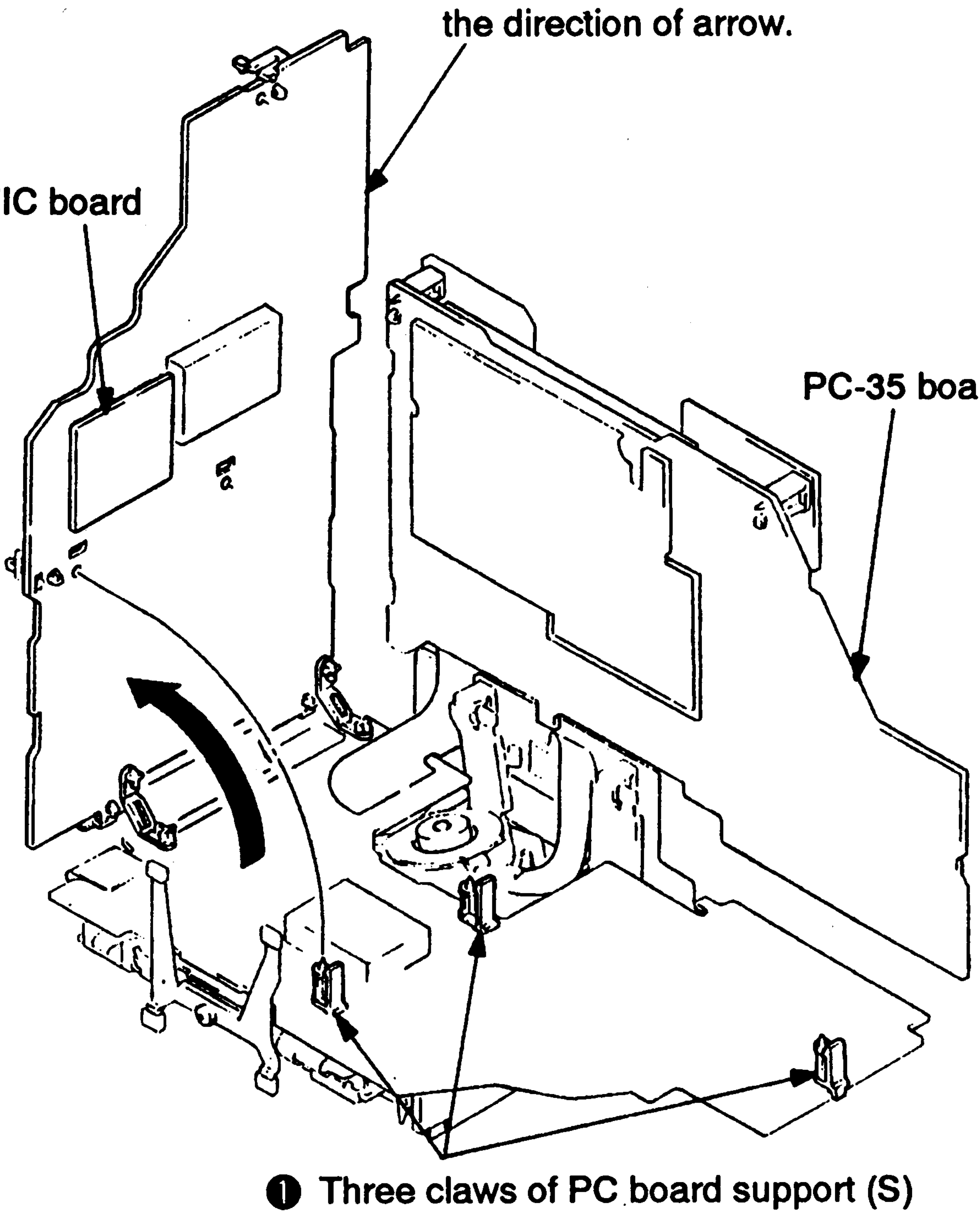
2-8. OPENING OF AS-22 BOARD


❷ Open the AS-22 board in the direction of arrow.
❶ Screw (B2× 3)

2-9. OPENING OF PC-35 BOARD

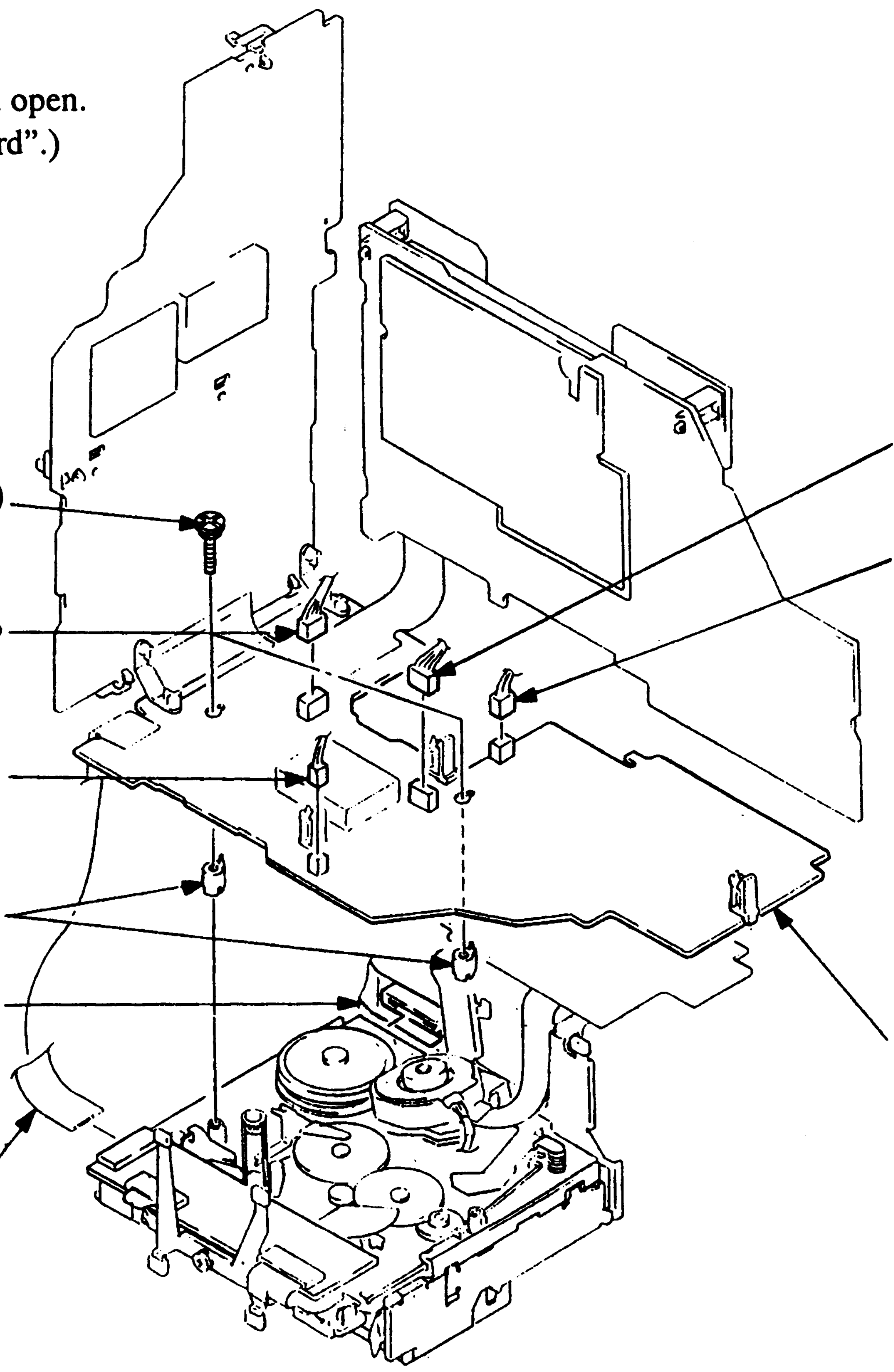

AS-22 board
❷ Three claws of PC board support (V)
❶ Two claws of PC board support (V)
❸ Open the PC-35 board in the direction of arrow.

2-10. OPENING OF VI-66 BOARD

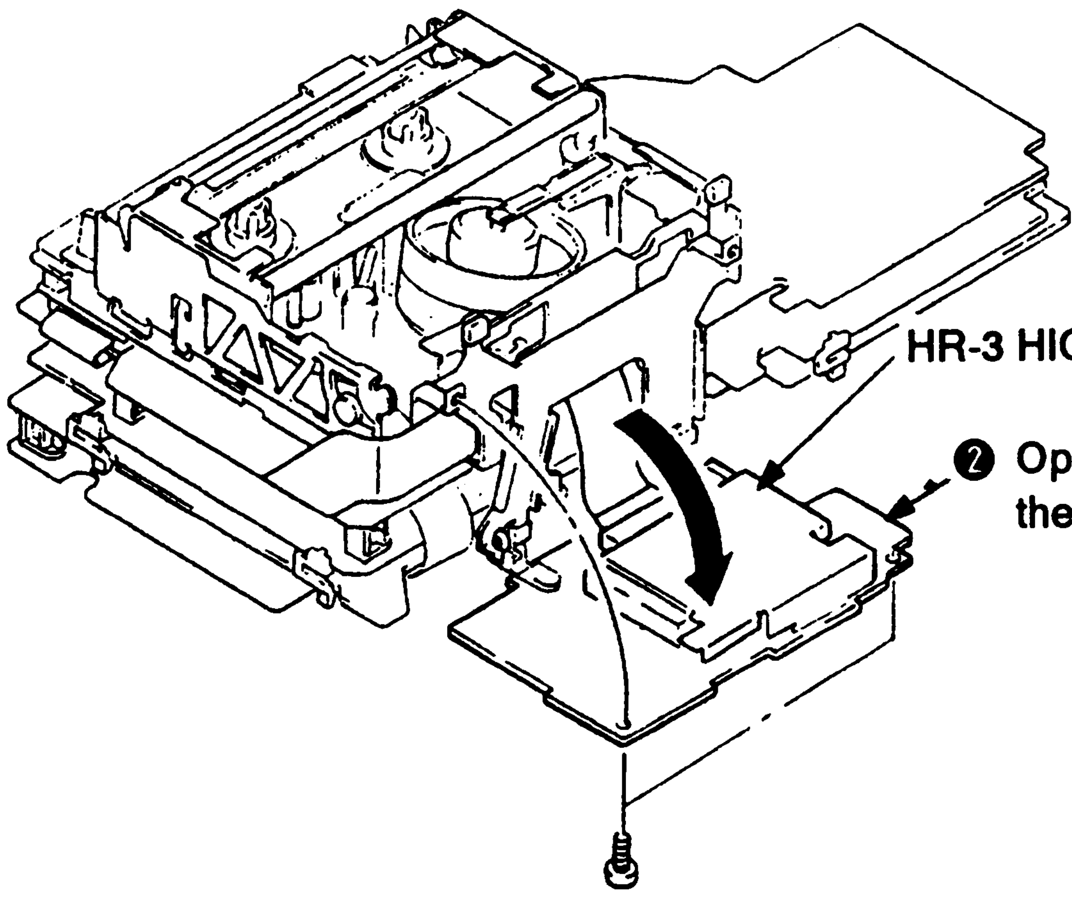

❷ Open the VI-66 board in the direction of arrow.
HD-8 HIC board
PC-35 board
❶ Three claws of PC board support (S)

2-11. REMOVAL OF SS-95 BOARD

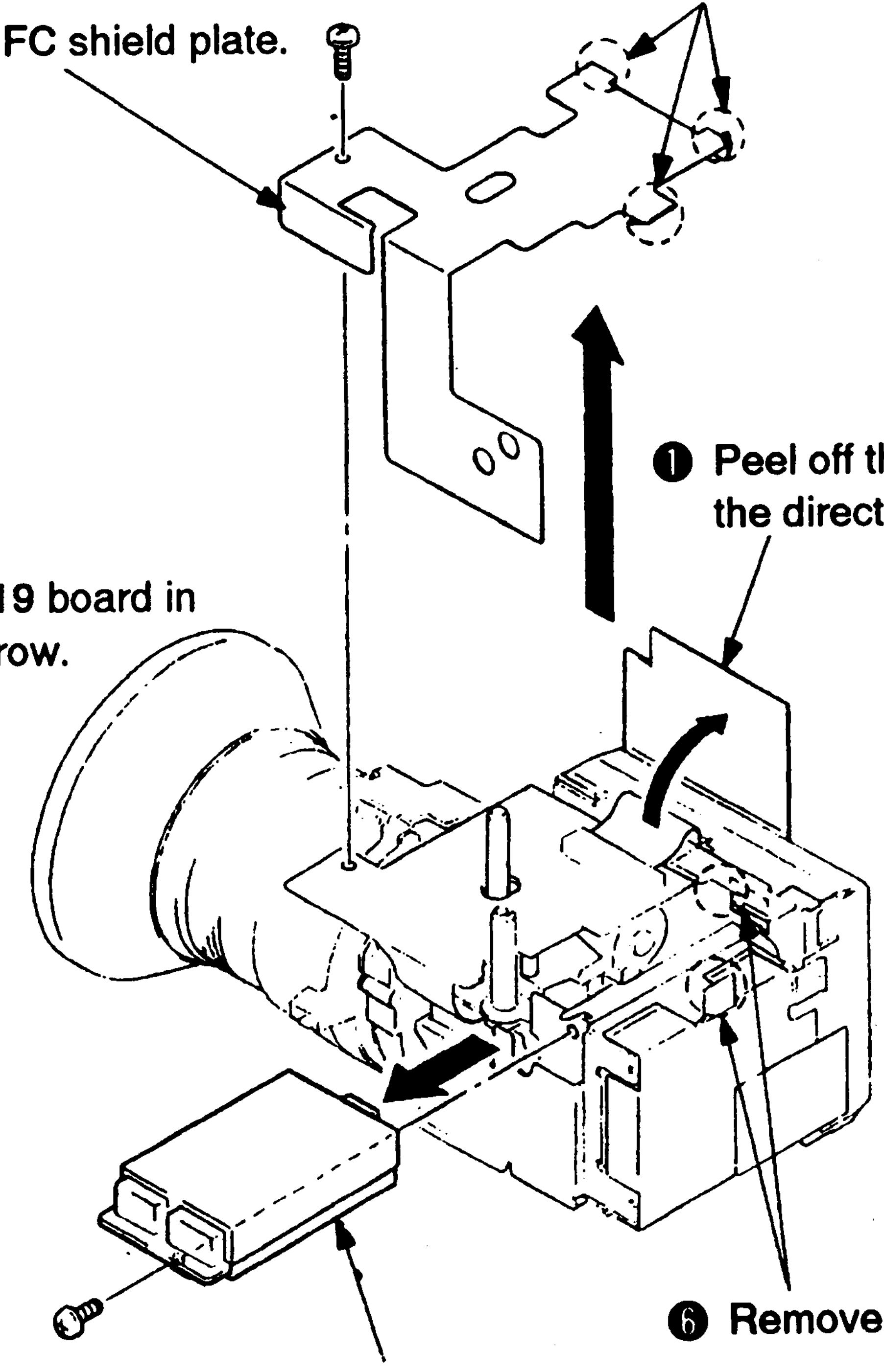
Note: Perform servicing with the MR-19 board open.
(Refer to "2-12. Opening of MR-19 Board".)


❶ Two screws
(special head tapping screw M2× 8)
❸ Connector CN201 4P
(SS-95 board)
❻ Connector CN003 2P
(SS-95 board)
❽ PC board spacer (B) (two pieces)
❼ FP-240 flexible board 15P
(capstan motor)
❷ Flat cable CN003 14P
(CC-27 board)
❹ Connector CN202 4P
(SS-95 board)
❺ Connector CN002 2P
(SS-95 board)
❾ SS-95 board

2-12. OPENING OF MR-19 BOARD

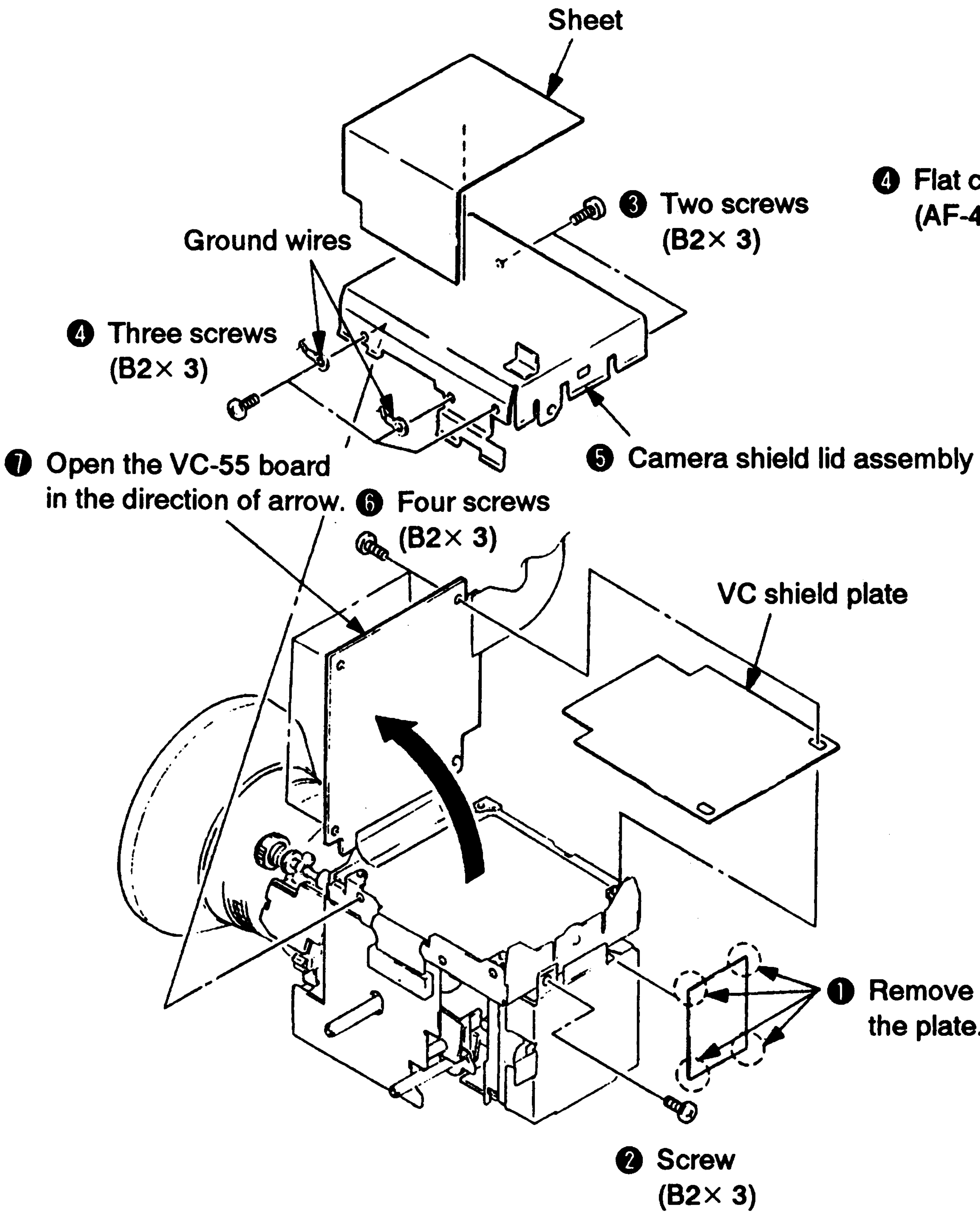

HR-3 HIC board
❷ Opening the MR-19 board in
the direction of arrow.
❶ Two screws
(B2× 3)

2-13. REMOVAL OF DC-DC CONVERTER UNIT (CAMERA)

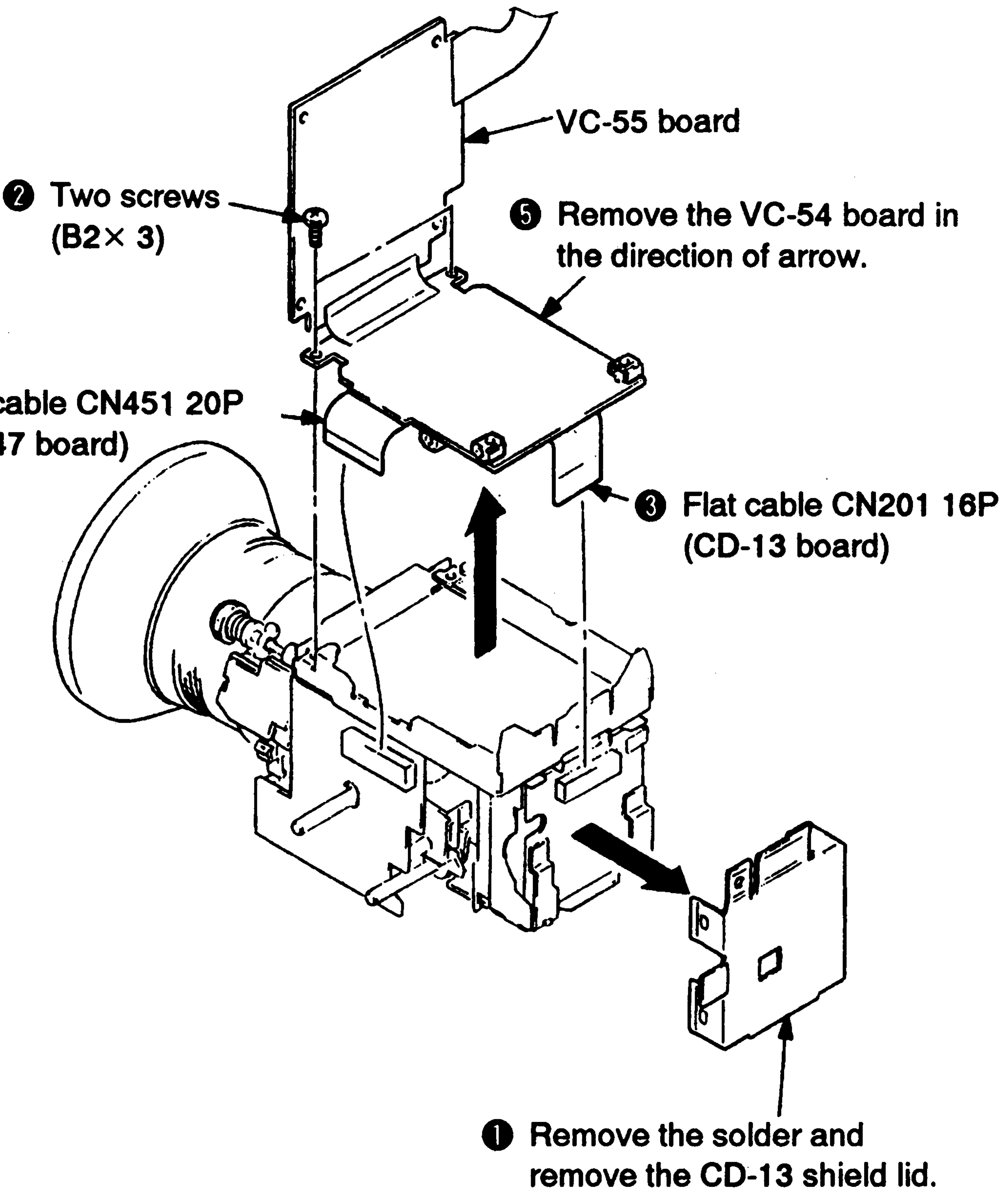

❷ Screw
(BTP2× 5)
❸ Remove three solders.
❹ Remove the FC shield plate.
❶ Peel off the sheet in
the direction of arrow.
❻ Remove two solders.
❺ Screw
(BVTT2× 5)
❼ Remove the DC-DC converter unit
in the direction of arrow.

2-14. OPENING VC-55 BOARD

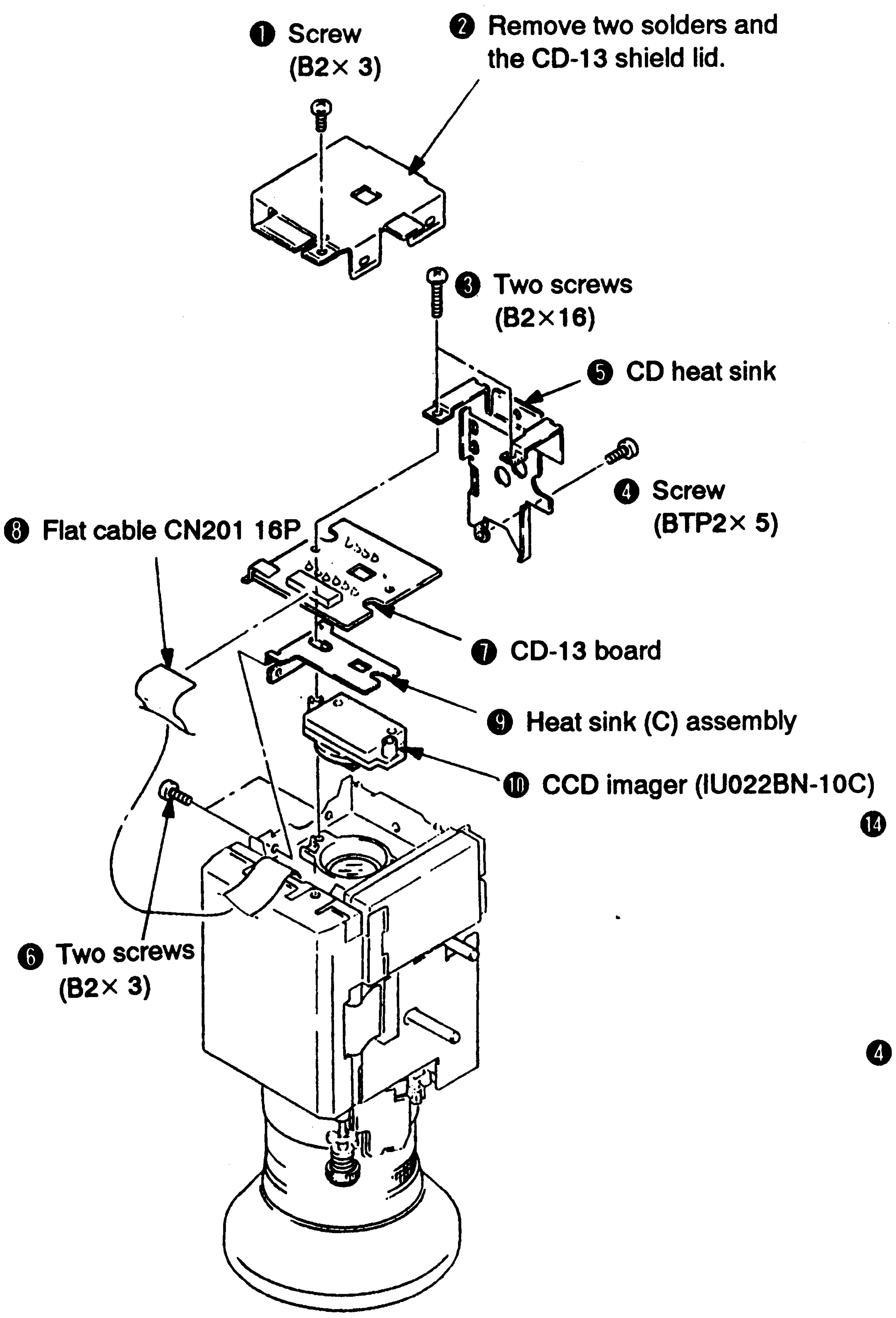
Note: Remove solders on the camera shield lid assembly.
(Refer to “2-13. Removal of DC-DC Converter Unit”.)


Sheet
❸ Two screws
(B2× 3)
Ground wires
❹ Three screws
(B2× 3)
❼ Open the VC-55 board
in the direction of arrow.
❻ Four screws
(B2× 3)
❺ Camera shield lid assembly
VC shield plate
❶ Remove four solders and
the plate.
❷ Screw
(B2× 3)

2-15. REMOVAL OF VC-54 AND VC-55 BOARDS


VC-55 board
❷ Two screws
(B2× 3)
❺ Remove the VC-54 board in
the direction of arrow.
❹ Flat cable CN451 20P
(AF-47 board)
❸ Flat cable CN201 16P
(CD-13 board)
❶ Remove the solder and
remove the CD-13 shield lid.

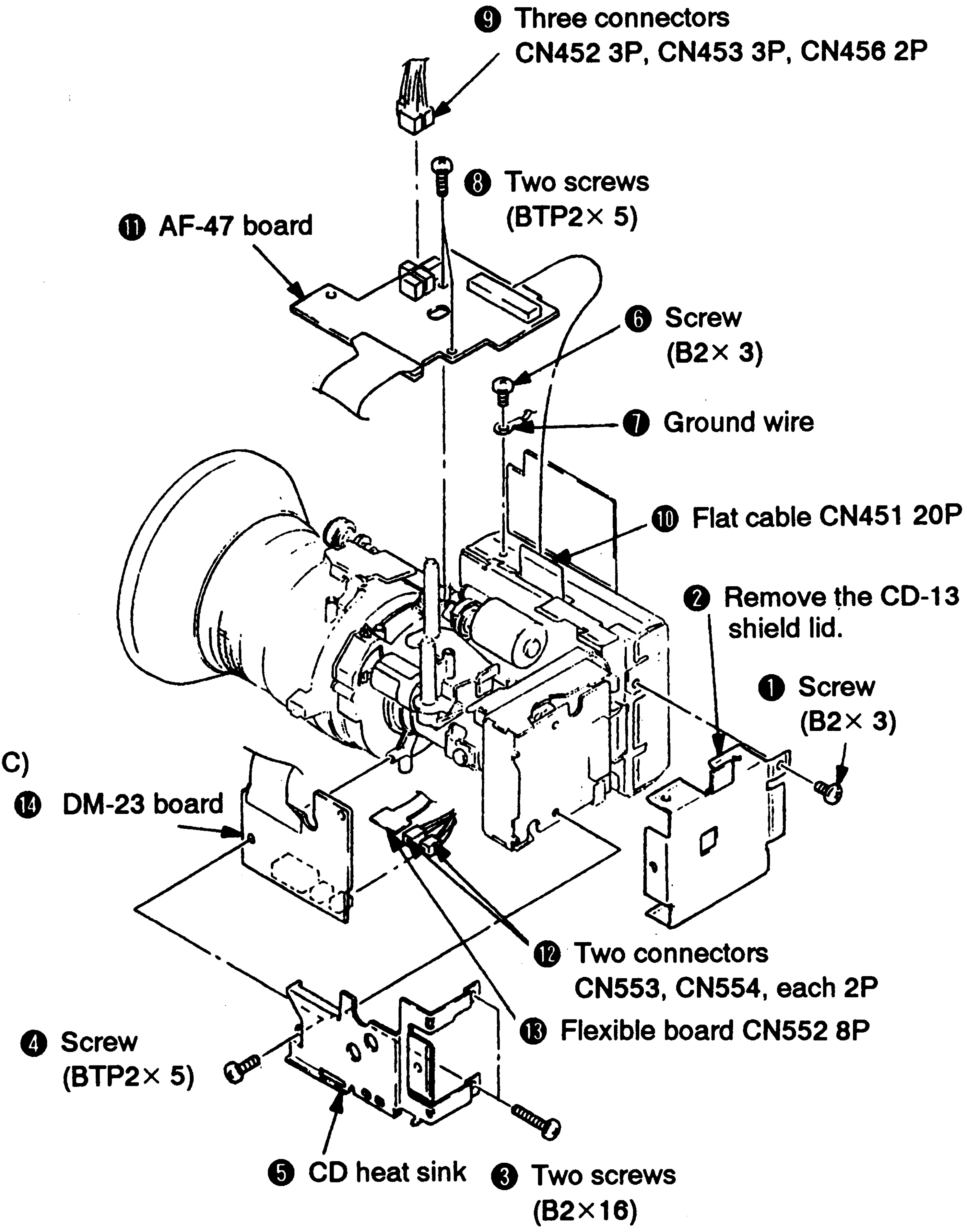
2-16. REMOVAL OF CD-13 BOARD (REMOVAL OF CCD IMAGER)



❶ Screw (B2× 3)
❷ Remove two solders and the CD-13 shield lid.
❸ Two screws (B2×16)
❺ CD heat sink
❹ Screw (BTP2× 5)
❽ Flat cable CN201 16P
❼ CD-13 board
❾ Heat sink (C) assembly
❿ CCD imager (IU022BN-10C)
❻ Two screws (B2× 3)

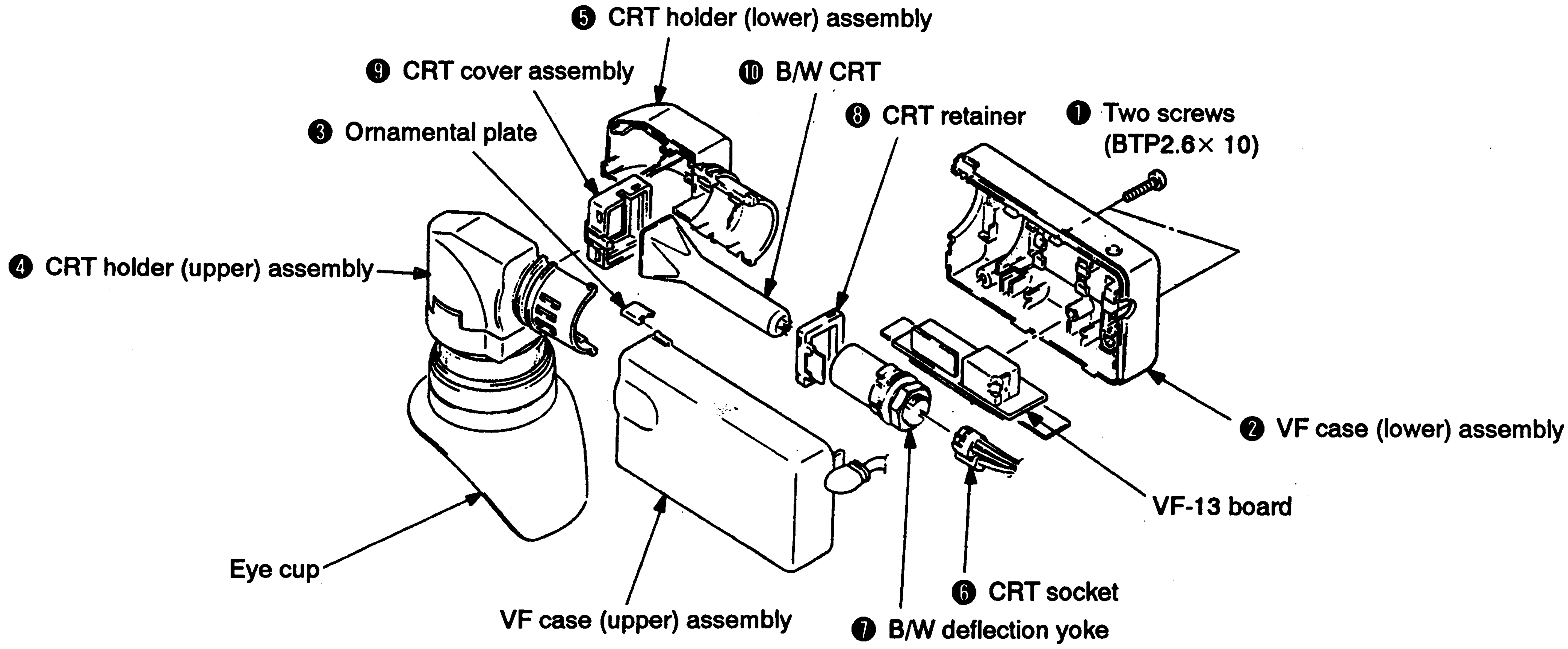
2-17. REMOVAL AF-DM ASSEMBLY

Note: Remove the DC-DC converter and the FC shield plate before servicing.
(Refer to "2-13. Removal DC-DC Converter Unit".)

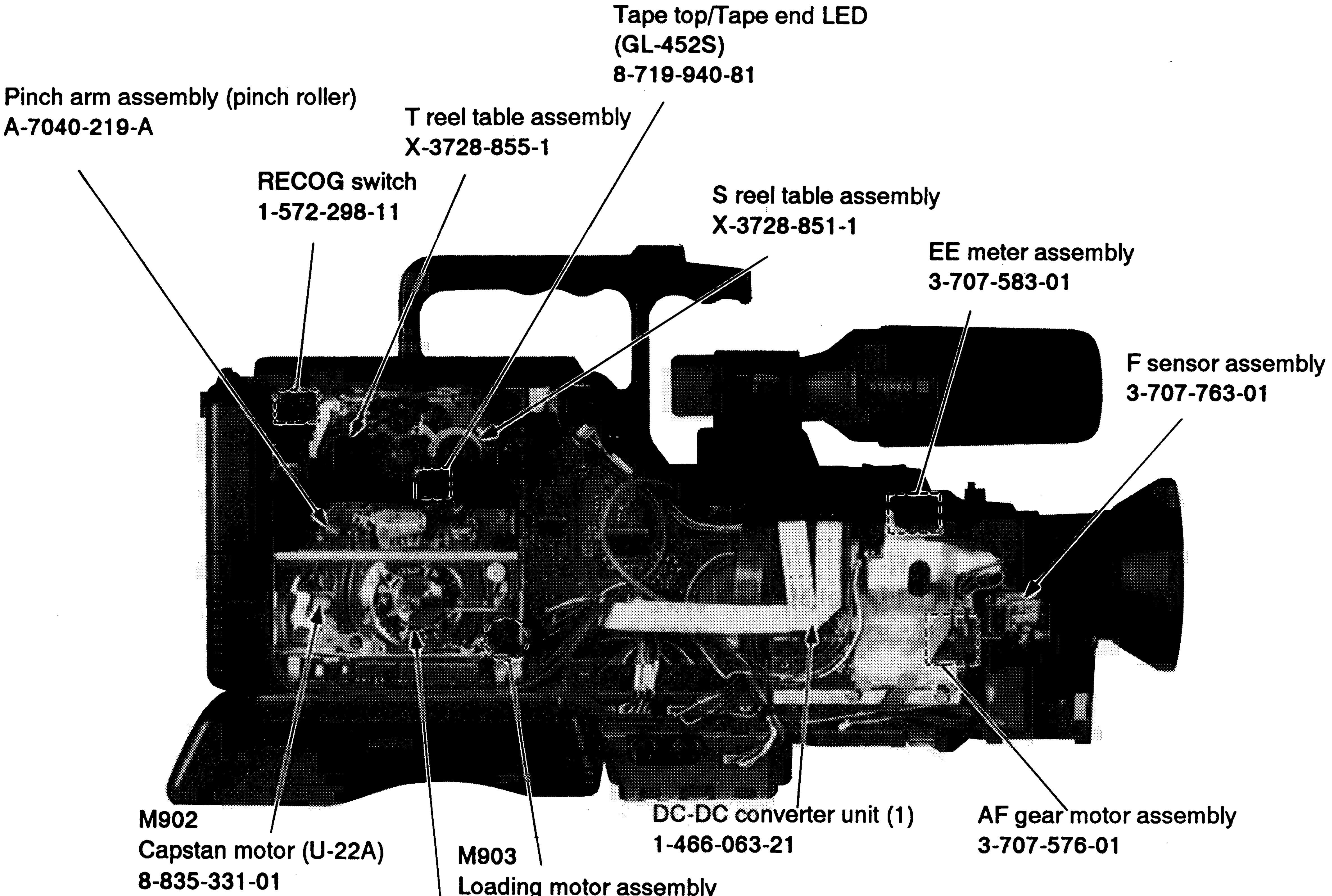


❾ Three connectors CN452 3P, CN453 3P, CN456 2P
❽ Two screws (BTP2× 5)
⓫ AF-47 board
❻ Screw (B2× 3)
❼ Ground wire
❿ Flat cable CN451 20P
❷ Remove the CD-13 shield lid.
❶ Screw (B2× 3)
⓮ DM-23 board
⓬ Two connectors CN553, CN554, each 2P
⓭ Flexible board CN552 8P
❹ Screw (BTP2× 5)
❺ CD heat sink
❸ Two screws (B2×16)

2-18. REMOVAL OF B/W CATHODE-RAY TUBE (EVF ASSEMBLY)

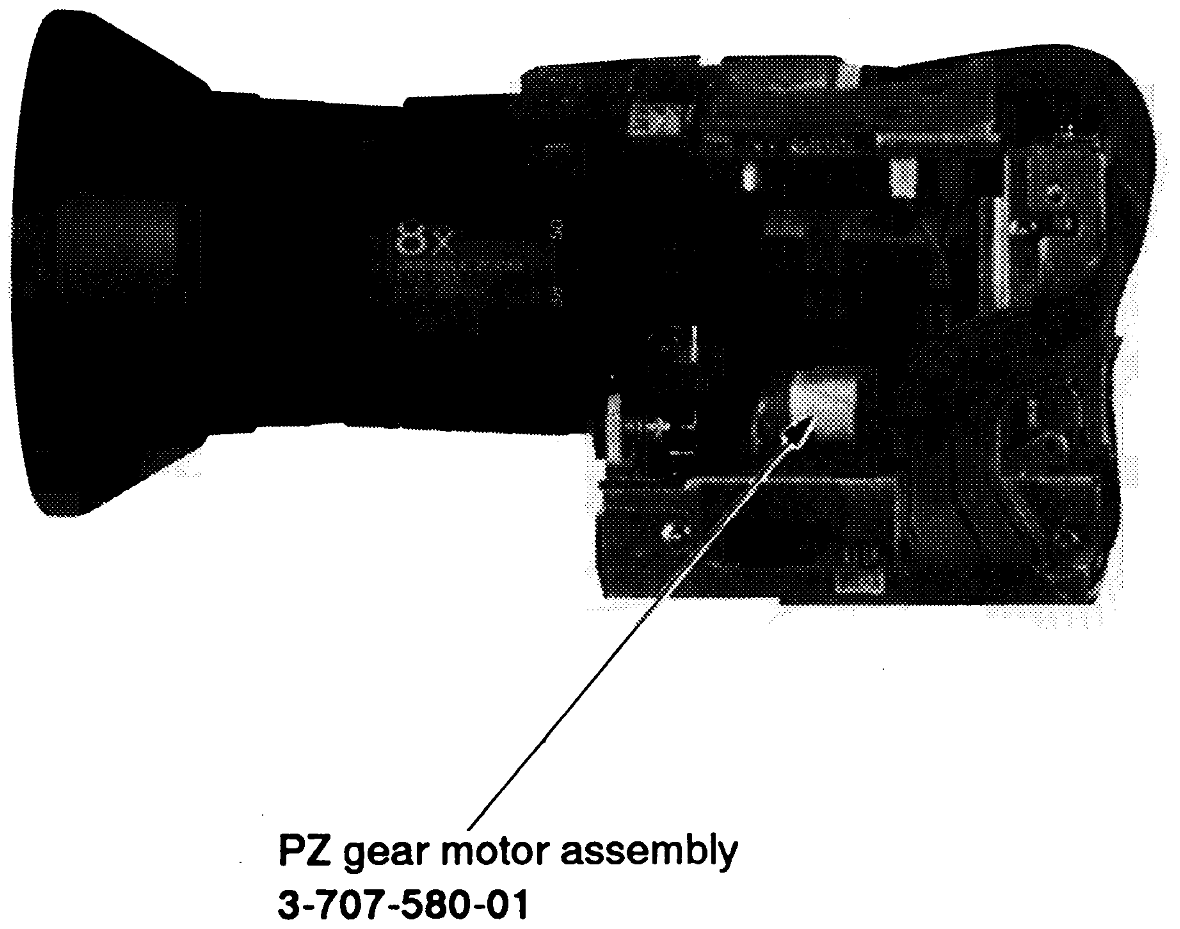

❺ CRT holder (lower) assembly
❾ CRT cover assembly
❿ B/W CRT
❸ Ornamental plate
❽ CRT retainer
❶ Two screws
(BTP2.6× 10)
❹ CRT holder (upper) assembly
❷ VF case (lower) assembly
VF-13 board
Eye cup
❻ CRT socket
VF case (upper) assembly
❼ B/W deflection yoke

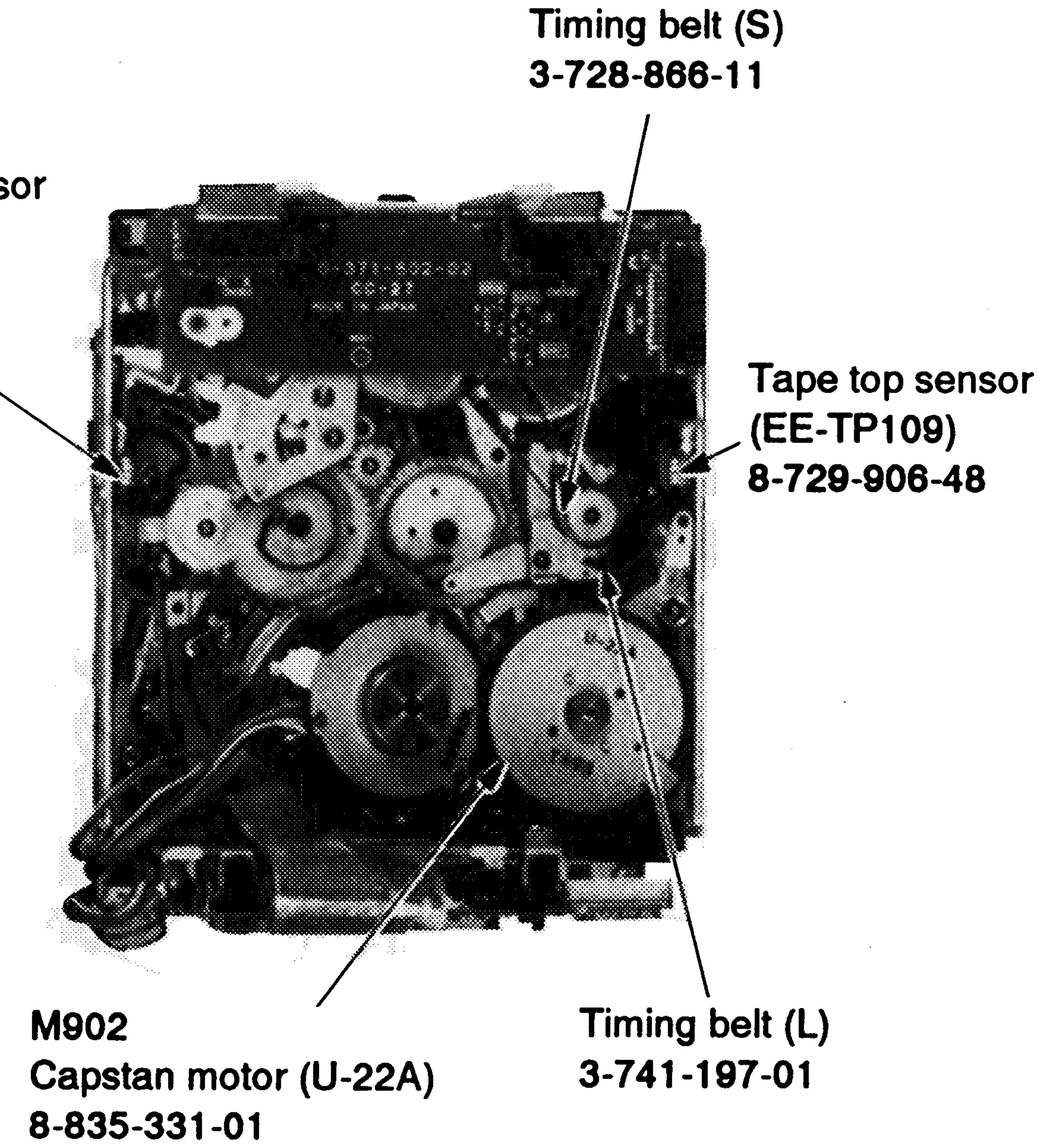
2-19. INTERNAL VIEW


Tape top/Tape end LED
(GL-452S)
8-719-940-81
Pinch arm assembly (pinch roller)
A-7040-219-A
T reel table assembly
X-3728-855-1
RECOG switch
1-572-298-11
S reel table assembly
X-3728-851-1
EE meter assembly
3-707-583-01
F sensor assembly
3-707-763-01
M902
Capstan motor (U-22A)
8-835-331-01
M903
Loading motor assembly
A-7040-160-A
DC-DC converter unit (1)
1-466-063-21
AF gear motor assembly
3-707-576-01

Drum

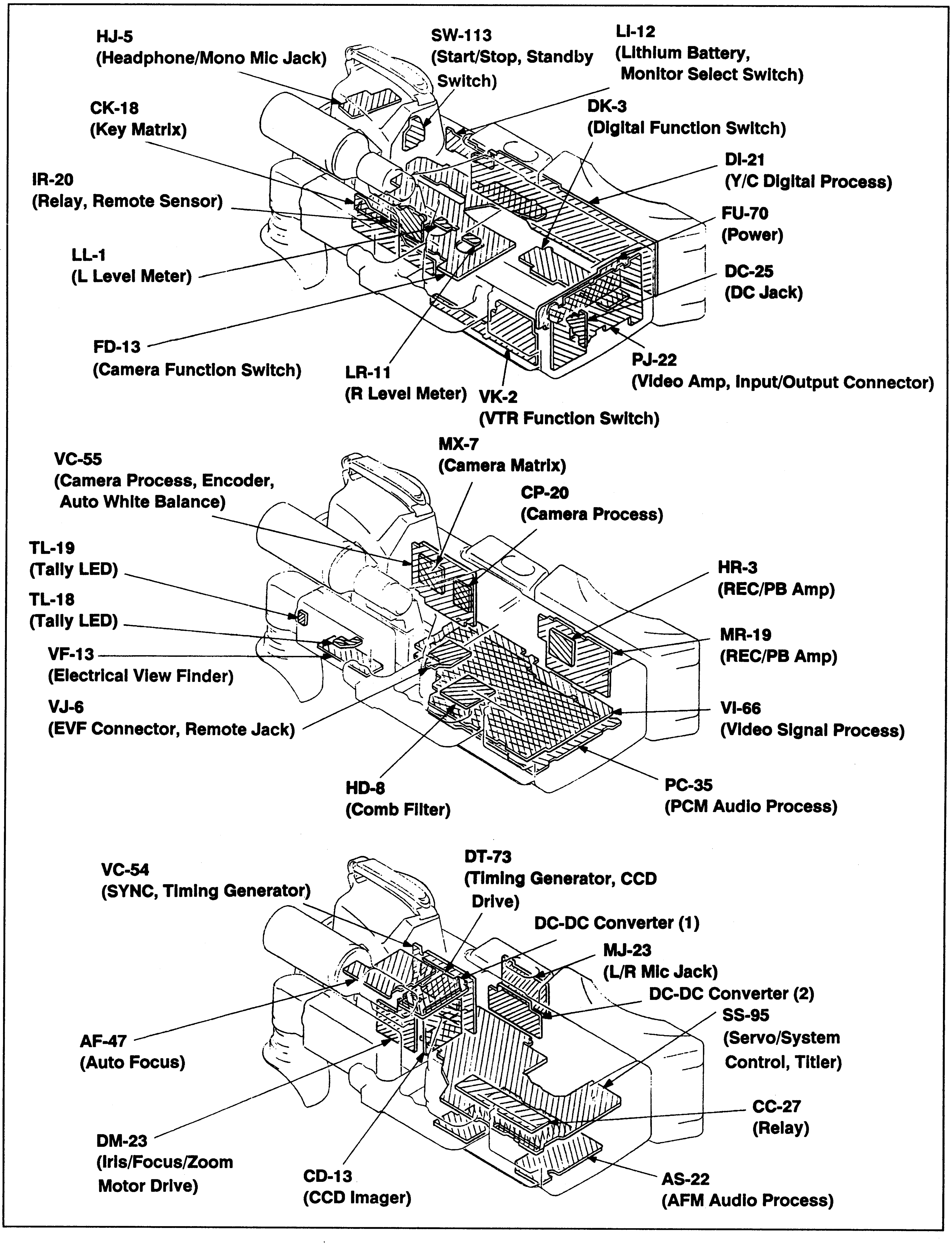
Drum assembly DGU-59A-R	A-7048-335-A
Rotary upper drum assembly DGU-59-R	A-7049-285-A


PZ gear motor assembly
3-707-580-01


Timing belt (S)
3-728-866-11
Tape end sensor
(EE -TP109)
8-729-906-48
Tape top sensor
(EE-TP109)
8-729-906-48
M902
Capstan motor (U-22A)
8-835-331-01
Timing belt (L)
3-741-197-01

SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION


HJ-5
(Headphone/Mono Mic Jack)
SW-113
(Start/Stop, Standby Switch)
LI-12
(Lithium Battery, Monitor Select Switch)
CK-18
(Key Matrix)
DK-3
(Digital Function Switch)
DI-21
(Y/C Digital Process)
IR-20
(Relay, Remote Sensor)
FU-70
(Power)
LL-1
(L Level Meter)
DC-25
(DC Jack)
FD-13
(Camera Function Switch)
LR-11
(R Level Meter)
VK-2
(VTR Function Switch)
PJ-22
(Video Amp, Input/Output Connector)
VC-55
(Camera Process, Encoder, Auto White Balance)
MX-7
(Camera Matrix)
CP-20
(Camera Process)
TL-19
(Tally LED)
TL-18
(Tally LED)
HR-3
(REC/PB Amp)
VF-13
(Electrical View Finder)
MR-19
(REC/PB Amp)
VJ-6
(EVF Connector, Remote Jack)
VI-66
(Video Signal Process)
HD-8
(Comb Filter)
PC-35
(PCM Audio Process)
VC-54
(SYNC, Timing Generator)
DT-73
(Timing Generator, CCD Drive)
DC-DC Converter (1)
MJ-23
(L/R Mic Jack)
DC-DC Converter (2)
SS-95
(Servo/System Control, Titler)
AF-47
(Auto Focus)
CC-27
(Relay)
DM-23
(Iris/Focus/Zoom Motor Drive)
CD-13
(CCD Imager)
AS-22
(AFM Audio Process)

3-11. SYSTEM CONTROL INTERFACE

3-11-1. Servo/System Control IC Pin Functions

- **SS-95 board IC001 (CXP80116)**

Pin No.	Port name	I/O	Active	Function
1	SEL2	O	H	ATF control signal
2	SEL1	O	H	
3	FERA	O	H	Video mask area when dubbing (AUDIO DUB)
4	VISWP	O	H	30 Hz, duty 50% signal, when PB
5	$\overline{\text{DRUM ACCEL}}$	O	L	Drum acceleration signal when SLOW, etc.
6	DRUM BRAKE	O	H	Drum deceleration signal when SLOW, etc.
7	$\overline{\text{DMWE}}$	O	L	Permission for memory writing
8	JOG	O	H	Normal/variable speed playback selecting signal for video circuit
9	TSB	O	H	Sampling hold signal for ATF AGC
10	H CHG	O	H	Head selecting signal when SLOW/STILL
11	SYSTEM SYNC	O	H	Vd signal synchronized to Comp sync input
12	SP/$\overline{\text{LP}}$	O	H	SP: H, LP: L (mode selecting output)
13	DM ON/OFF	O	H	MEMORY/THROUGH selecting signal, H: MEMORY, L: THROUGH
14	VA PB MODE	O	H	REC/PB selecting signal for video, audio circuits
15	$\overline{\text{M IN3}}$	I	L	Mode input signal from mechanism switches
16	$\overline{\text{M IN2}}$	I	L	
17	$\overline{\text{M IN1}}$	I	L	
18	$\overline{\text{M IN0}}$	I	L	
19	———	—	—	Not used
20	LM UNLOAD	O	H	Control signal for loading motor, H: UNLOADING
21	LM LOAD	O	H	Control signal for loading motor, H: LOADING
22	———	—	—	Not used
23	———	—	—	
24	M OUT2	O	L	Mode control output signal of mechanism switches
25	$\overline{\text{M OUT1}}$	O	L	
26	$\overline{\text{M OUT0}}$	O	L	
27	TOP/END LED	O	H	LED control signal for TOP/END detection of tape
28	$\overline{\text{REEL LED}}$	O	L	LED control signal for reel rotation detection
29	PCM INHIBIT	O	L	PCM recording inhibit signal, Normal: Hi-z, Inhibit: L
30	AF REC	O	H	Hi signal output during after recording mode
31	MP	I		Fixed to "LOW"
32	$\overline{\text{RST}}$	I	L	Reset signal input pin from mode controller
33	GND			
34	XTAL			Pin to connect 16 MHz crystal oscillator
35	EXTAL	I		
36	$\overline{\text{MECHA CS}}$	I	L	Chip select signal from mode control microprocessor
37	DATA TO SLV	I	H	Data that send from mode control microprocessor to servo/system control microprocessor
38	DATA TO MST	O	H	Data that send from servo/system control microprocessor to mode control microprocessor
39	$\overline{\text{CLK}}$	I	L	Clock from mode control microprocessor
40	———			

Pin No.	Port name	I/O	Active	Function
41	E DET	I	H	Auto discrimination result for playback, H: Hi-8, L: NORMAL
42	STE/MONO	I	H	Mode discrimination result for AFM, H: STEREO, L: MONO
43	M IN4	I	L	Fixed to "L", not used
44	TOP SENS	I	H	Tape top detection signal
45	END SENS	I	H	Tape end detection signal
46	T REEL FG	I	H	T reel table rotation detection signal
47	S REEL FG	I	H	S reel table rotation detection signal
48	BATT SENS	I		Battery level detection signal
49	—	—	—	Not used
50	SW POSI ADJ	I		Position adjustment for PF SWP
51	ATF ERROR	I		ATF error (ATF lock)
52	AVss			GND pin of A/D converter
53	AVref	I		Reference voltage input pin of A/D converter
54	AVDD			Positive power supply pin of A/D converter
55	DRUM PG	I	H	Drum PG input pin, 60 Hz
56	—	—	—	Not used
57	CLOG	I	H	PB RF detection result input, existence/no existence
58	COMP SYNC	I	H	Video composite sync input pin
59	PB SP/LP	I	H	SP/LP detection signal when PB
60	DRUM PG	I	H	Drum PG input pin
61	DRUM FG	I	H	Drum PG input pin, 600 Hz, duty 50%
62	CAP FG	I	H	Capstan FG input
63	CLOG CONT	O	H	
64	DRUM ON	O	L	Drum motor ON/OFF signal
65	CAP D/A	O	H	Capstan servo control signal
66	DRUM D/A	O	H	Drum servo control signal
67	CAP PWM	O	H	PWM output pin for CAP error output (Servo exclusive output pin)
68	DRUM RVS	O	H	Drum motor forward/reverse rotation control signal
69	CAP FG	I	H	Capstan FG input, SP: 1325 Hz, duty 50%
70	—	—	—	Not used
71	NMI		L	Normally "H"
72	VDD			Positive power supply pin
73	GND			GND pin
74	—	—	—	Not used
75	CAP ON	O	H	Capstan motor ON/OFF signal
76	CAP FWD	O	H	Capstan motor forward/reverse rotation control signal
77	RP PB MODE	O	L	REC/PB selecting signal for REC/PB amplifier
78	FE ON(FERS)	O	H	Flying erase oscillation ON, OFF signal
79	JOG VD	O	H	Pseudo VD signal when variable speed mode
80	RF SWP	O	H	RF switching pulse output pin (30Hz when PB, duty 50%)

* Active indicates positive logic of signal. In case it is edge, it functions as "H".

3-11-2. Mode Control IC Pin Function

- **SS-95 board IC101 (μPD75316)**

Pin No.	Port name	I/O	Active	Function
1	S12	O	*	LCD segment drive signal
2	S13	O	*	
3	S14	O	*	
4	S15	O	*	
5	S16	O	*	
6	S17	O	*	
7	S18	O	*	
8	S19	O	*	
9	S20	O	*	
10	S21	O	*	
11	—	O	*	–
12	—	O	*	–
13	EVR CS	O	L	Chip select signal to EVR microprocessor (IC301 on VC-55 board)
14	MECHA CS	O	L	Chip select signal to mechanism control microprocessor (IC101 on SS-95 board)
15	TITLE CS	O	H	Chip select signal to titler microprocessor (IC161 on SS-95 board)
16	SRAM CS	O	H	Chip select signal to SRAM1 (IC162 on SS-95 board)/titler free-run
17	CG STB	O	H	Strobe signal for character generator
18	VA SP STB	O	H	Strobe signal for video serial/parallel
19	PCM SP STB	O	H	Strobe signal for PCM serial/parallel
20	PCM RAM CS	O	L	RAM chip select signal for PCM
21	COM 0	O	*	LCD drive signal
22	COM 1	O	*	
23	COM 2	O	*	
24	COM 3	O	*	
25	BIAS	O		Fixed to "L"
26	Vcc 0	I		Power supply pin for LCD drive
27	Vcc 1	I		
28	Vcc 2	I		
29	CAM POWER	O	L	Power supply ON/OFF signal for camera
30	VTR POWER	O	L	Power supply ON/OFF signal for VTR
31	DM POWER	O	L	Power supply ON/OFF signal for digital memory
32	DM CS	O	L	Chip select signal for digital memory
33	GND	-	-	-
34	K OUT 1	O	L	Key matrix output 0
35	K OUT 2	O	L	Key matrix output 1
36	K OUT 3	O	L	Key matrix output 2
37	K OUT 4	O	L	Key matrix output 3
38	BATT IN	I	L	Detection of battery pack presence
39	CLK	I/O	L	O: clock from mode controller, I: clock from camera microprocessor
40	DATA TO SLV	O	H	Data that send from mode controller to servo/system controller

Pin No.	Port name	I/O	Active	Function
41	DATA TO MST	I	H	Data that send from other microprocessors to mode controller
42	REF VD	I	L	System sync
43	$\overline{\text{DEW}}$	I	L	Dew detection signal
44	$\overline{\text{LINCS PWR}}$	I	L	Power OFF to ON input signal from remote commander
45	$\overline{\text{LI PRE END}}$	I	L	Lithium battery PRE END input
46	$\overline{\text{K OUT 5}}$	O	L	Key matrix output 5
47	$\overline{\text{K OUT 6}}$	O	L	Key matrix output 6
48	$\overline{\text{K OUT 7}}$	O	L	Key matrix output 7
49	$\overline{\text{K OUT 8}}$	O	L	Key matrix output 8
50	FADER PWM	O	H	PWM signal output pin for camera fader
51	$\overline{\text{MAKER CS}}$	O	L	Chip select signal for video marker
52	$\overline{\text{K OUT 9}}$	O	L	Key matrix output 9
53	$\overline{\text{SYSTEM RST}}$	O	L	AF/servo system controller reset signal output pin when power supply ON
54	VDD	—	—	Positive power supply input pin
55	XT1	I		Pin to connect clock oscillator for clock
56	XT2	I		
57	—	—	—	Not used
58	X1	I		Pin to connect main clock oscillator
59	X2	I		
60	K IN 1	I	L	Key matrix input 1
61	K IN 2	I	L	Key matrix input 2
62	K IN 3	I	L	Key matrix input 3
63	K IN 4	I	L	Key matrix input 4
64	K IN 5	I	L	Key matrix input 5
65	K IN 6	I	L	Key matrix input 6
66	K IN 7	I	L	Key matrix input 7
67	K IN 8	I	L	Key matrix input 8
68	$\overline{\text{RESET}}$	I	L	Reset signal input pin
69	—	O	*	Not used
70	—	O	*	
71		O	*	LCD segment drive signal
72		O	*	
73		O	*	
74		O	*	
75		O	*	
76		O	*	
77		O	*	
78		O	*	
79		O	*	
80		O	*	

* Active indicates positive logic of signal. In case it is edge, it functions as "H". LCD is 1/4 duty.

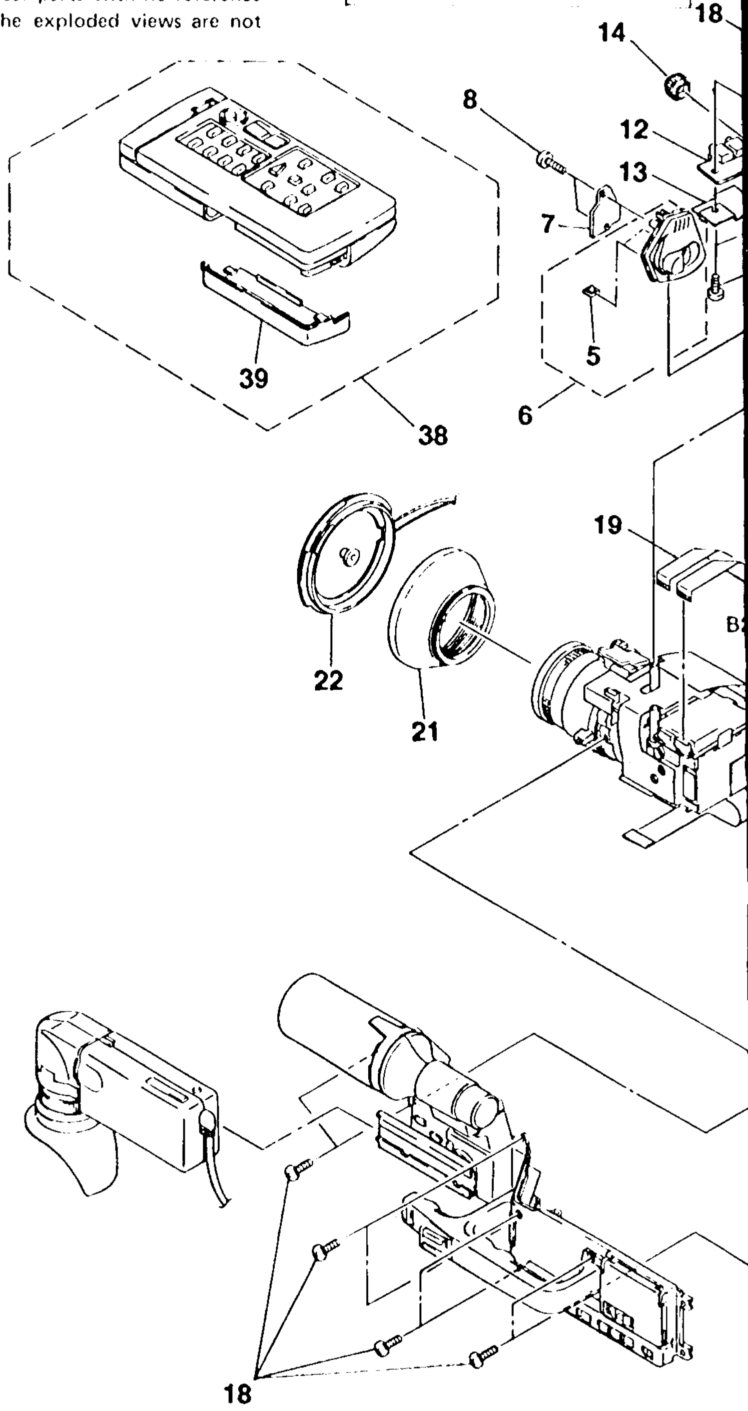
SECTION 5
EXPLODED VIEWS

NOTE:

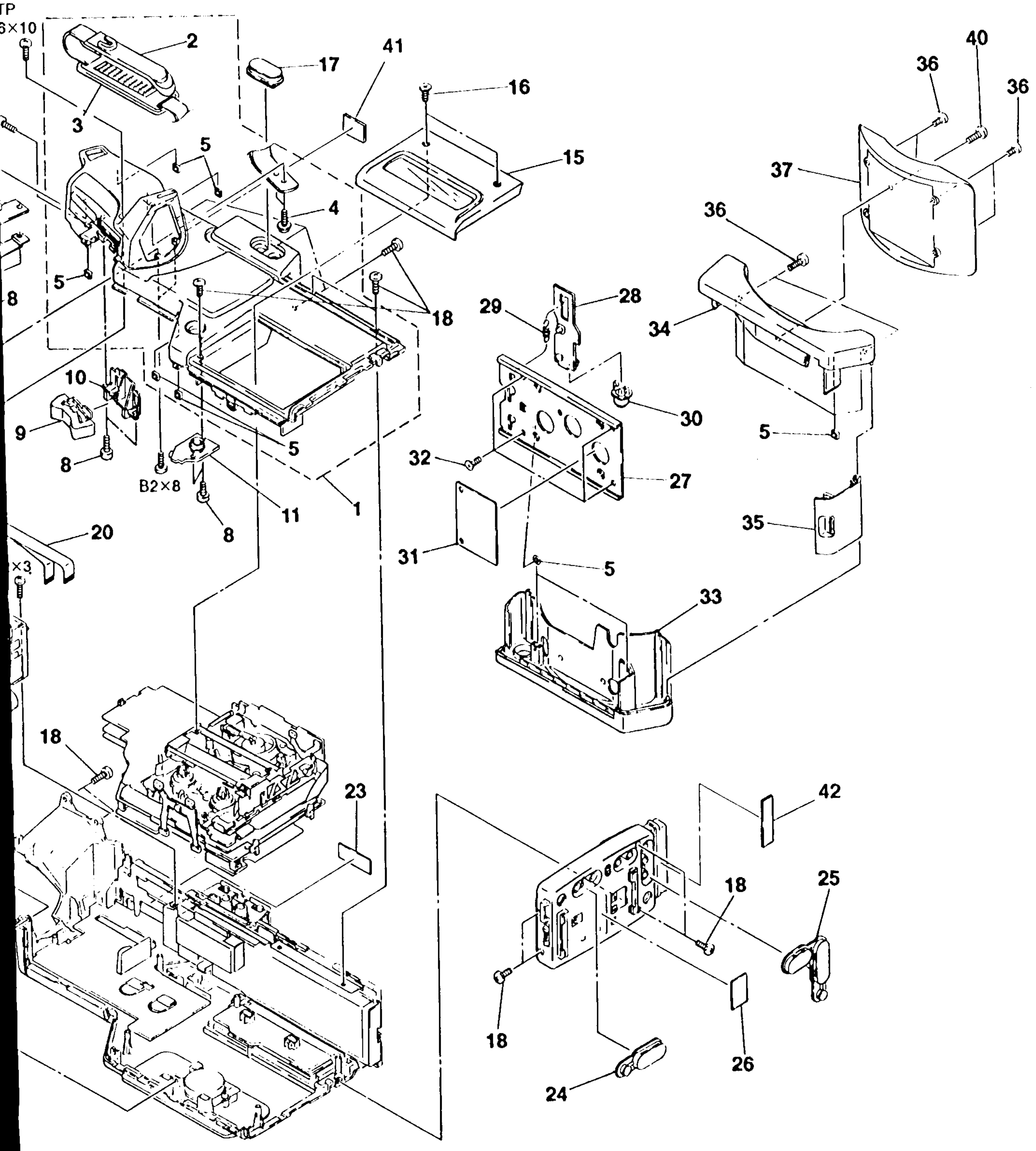
- –XX, –X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CABINET (LEFT) ASSEMBLY



No.	Part No.	Description	Remark
1	X-3742-720-1	CABINET (L) SUB ASSY	2-5
2	3-742-825-01	BELT, GRIP	
3	3-742-851-01	PAD, GRIP	
4	3-669-480-21	+ PTPWH 2	
5	3-718-233-01	NUT, PLATE	
6	X-3742-717-1	BASE SUB ASSY, SP	5
7	*1-633-599-11	SW-113 BOARD	
8	4-356-741-31	SCREW, TAPPING (BIND 2X8)	
9	1-571-373-11	SWITCH, PUSH (ZOOM T/W) (S901)	
10	3-742-802-01	HOLDER, ZM	
11	*1-633-598-11	VJ-6 BOARD	
12	*1-633-594-11	HJ-5 BOARD	
13	3-742-870-01	PLATE, BLIND, HJ	
14	3-742-800-01	KNOB, HV	
15	X-3742-708-1	LID ASSY, CASSETTE	
16	3-733-912-11	SCREW (M2X4.5), SPECIAL HEAD	
17	3-742-869-01	COVER, MIC JACK	
18	3-742-886-11	SCREW (M2X6), +B	
19	1-575-447-11	WIRE, FLAT TYPE 7P	
20	1-575-448-11	WIRE, FLAT TYPE 8P	
21	3-742-798-01	HOOD	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No.	Part No.	Description	Remark
22	X-3742-727-1	CAP ASSY, HOOD	
23	*3-742-884-01	LABEL, MODEL NUMBER (U/C)	
24	3-742-852-01	COVER (A), JACK	
25	3-742-853-01	COVER (B), JACK	
26	*3-719-683-01	LABEL, BATTERY FITTING	
27	3-742-789-01	PLATE, SLIDE	
28	X-3742-706-1	LEVER ASSY, LOCK	
29	3-307-373-00	SPRING, TENSION	
30	3-742-721-01	KNOB, LOCK	
31	3-742-717-01	PLATE, BLIND	
32	3-719-831-21	SCREW (M2X4)	
33	3-742-843-01	CABINET (R), LOWER	
34	3-742-842-01	CABINET (L), LOWER	
35	3-742-833-01	CABINET (DOOR), LOWER	
36	3-742-886-01	SCREW (M2X4), +B	
37	3-742-881-01	PAT, SHOULDER	
38	1-465-395-11	COMMANDER, REMOTE (RMT-500)	39
39	3-742-854-01	COVER, BATTERY	
40	3-742-900-01	SCREW, STOPPER	
41	*3-704-256-01	LABEL, CAUTION (US MODEL)	
42	*3-725-142-01	LABEL, FUSE (US/Canadian MODEL)	

SECTION 6
ELECTRICAL PARTS LIST

SS-95

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

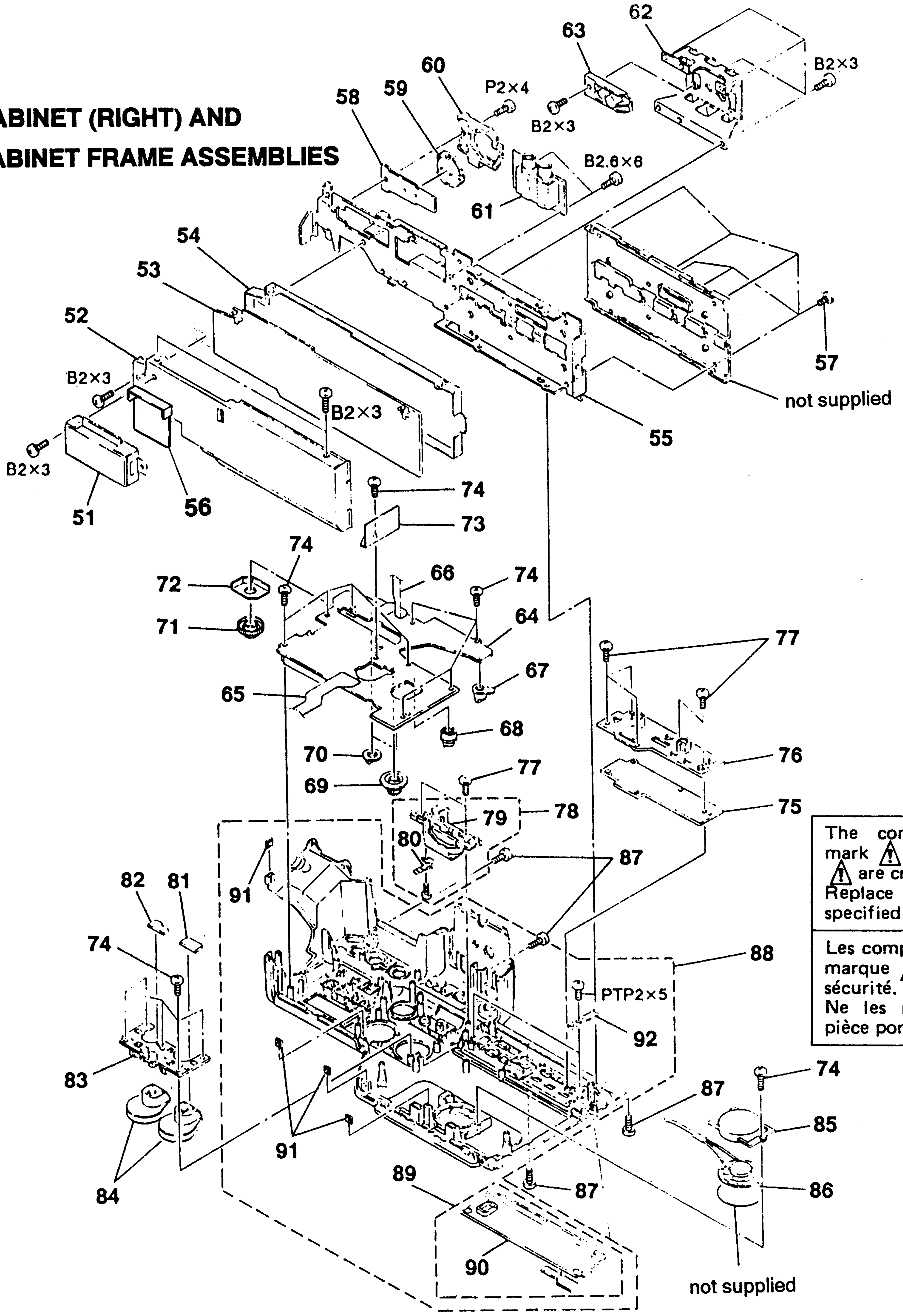
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- –XX, –X mean standardized parts, so they may have some difference from the original one.
- SEMICONDUCTORS
  In each case, U : μ, for example:
  UA...: μA..., UPA...: μPA..., UPB...: μPB..., UPC...: μPC..., UPD...: μPD...
- CAPACITORS
  MF : μF, PF : μμF
- COILS
  MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
	*A-7061-977-A	SS-95 BOARD, COMPLETE (Ref.No 5000 Series) **********************		
	1-562-880-11	CONNECTOR, CARD EDGE 15P		
		CAPACITOR		
C001	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C002	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C003	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C004	1-135-155-21	TANTAL. CHIP 4.7MF	20%	16V
C005	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C006	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C007	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C008	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C009	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C010	1-135-162-21	TANTAL. CHIP 33MF	20%	6.3V
C011	1-135-155-21	TANTAL. CHIP 4.7MF	20%	16V
C012	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C013	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C014	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C015	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C016	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C017	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C018	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C019	1-163-009-11	CERAMIC CHIP 0.001MF		50V
C070	1-163-205-00	CERAMIC CHIP 0.001MF	5%	50V
C072	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C073	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C075	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C076	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C077	1-163-059-00	CERAMIC CHIP 0.01MF	10%	50V
C101	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C102	1-124-257-00	ELECT 2.2MF	20%	35V
C103	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C104	1-124-257-00	ELECT 2.2MF	20%	35V
C105	1-126-157-11	ELECT 10MF	20%	16V
C106	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C107	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C108	1-126-157-11	ELECT 10MF	20%	16V
C109	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C110	1-124-257-00	ELECT 2.2MF	20%	35V
C111	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C112	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C113	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C114	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C115	1-126-151-11	ELECT 4.7MF	20%	16V
C116	1-124-257-00	ELECT 2.2MF	20%	35V
C117	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C118	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C119	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C161	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C162	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C163	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C164	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C166	1-163-091-00	CERAMIC CHIP 8PF	0.25PF	50V
C167	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C168	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C169	1-126-157-11	ELECT 10MF	20%	16V
C170	1-124-465-00	ELECT 0.47MF	20%	50V
C171	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C172	1-126-157-11	ELECT 10MF	20%	16V
C173	1-124-465-00	ELECT 0.47MF	20%	50V
C200	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C202	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C203	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C204	1-124-779-00	ELECT CHIP 10MF	20%	16V
C205	1-124-779-00	ELECT CHIP 10MF	20%	16V
C206	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C207	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C208	1-124-779-00	ELECT CHIP 10MF	20%	16V
C209	1-135-159-21	TANTAL. CHIP 10MF	20%	16V
C211	1-127-539-11	ELECT(SOLID) 1MF	20%	25V
C212	1-135-177-21	TANTAL. CHIP 1MF	20%	20V
C213	1-135-154-21	TANTAL. CHIP 3.3MF	20%	20V
C214	1-162-638-11	CERAMIC CHIP 1MF		16V
C215	1-124-779-00	ELECT CHIP 10MF	20%	16V
C216	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C217	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C218	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C219	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C220	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C221	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C222	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C223	1-136-718-11	FILM CHIP 0.1MF	5%	25V
C224	1-124-589-11	ELECT 47MF	20%	16V
C225	1-127-558-11	ELECT(SOLID) 10MF	20%	10V
C226	1-163-023-00	CERAMIC CHIP 0.015MF		50V
C227	1-135-070-00	TANTAL. CHIP 0.1MF	20%	35V
C228	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C229	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C230	1-135-070-00	TANTAL. CHIP 0.1MF	20%	35V
C231	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C232	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C233	1-127-558-11	ELECT(SOLID) 10MF	20%	10V
C234	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C235	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C236	1-127-558-11	ELECT(SOLID) 10MF	20%	10V
C237	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C238	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C239	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C240	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C241	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C242	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C244	1-135-154-21	TANTAL. CHIP 3.3MF	20%	20V
C245	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C246	1-163-038-00	CERAMIC CHIP 0.1MF		25V

5-2. CABINET (RIGHT) AND CABINET FRAME ASSEMBLIES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P2×4
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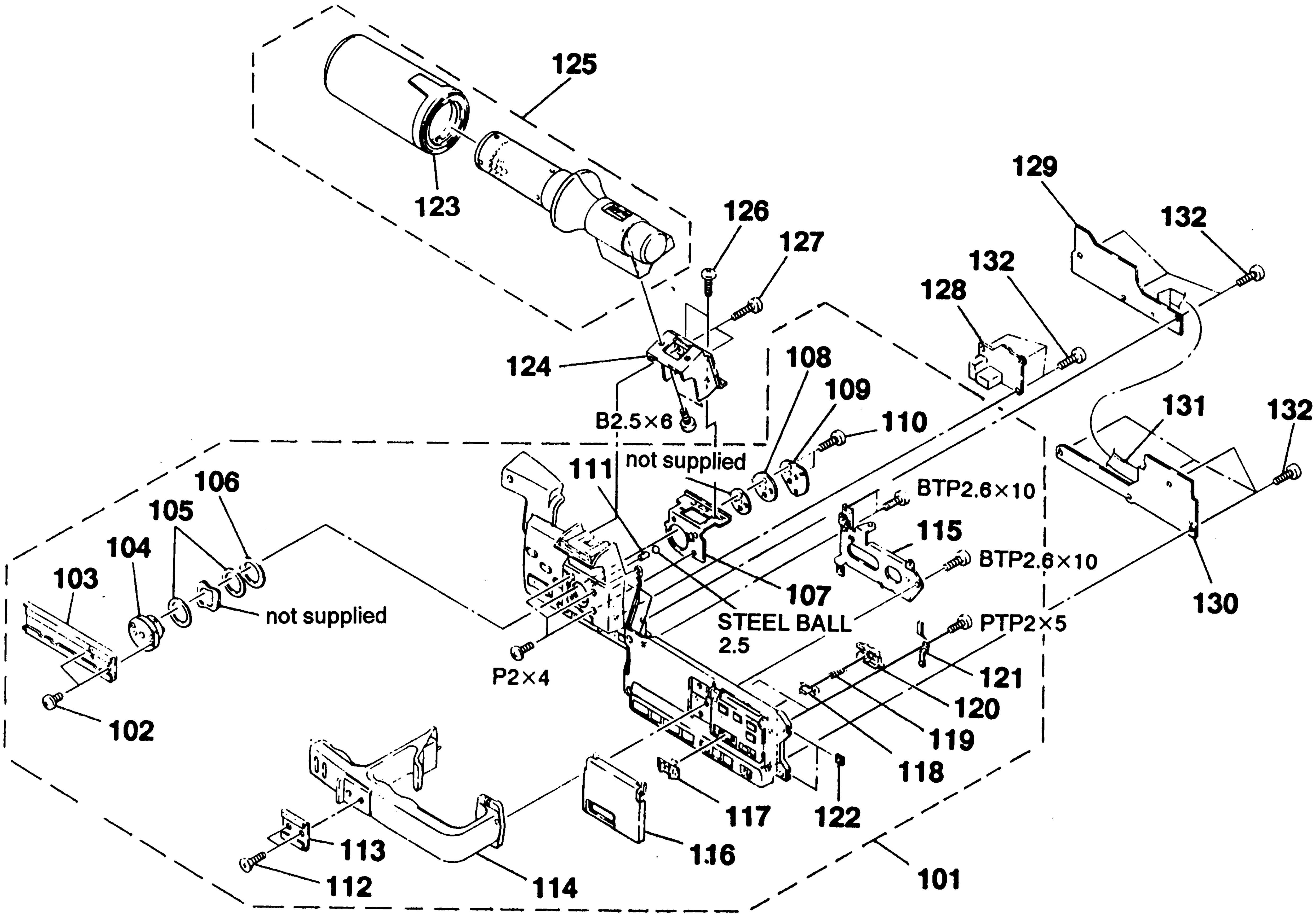
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

No.	Part No.	Description	Remark
51	⚠1-466-291-11	CONVERTER UNIT, DC-DC 2	
52	*X-3742-733-1	CASE (UPPER) ASSY, DI SHIELD	
53	*A-7062-172-A	DI-21 BOARD, COMPLETE	
54	*3-742-821-01	CASE (LOWER), SHIELD, DI	
55	*3-742-828-01	FRAME, CABINET	
56	*X-3742-730-1	PLATE ASSY, SHIELD, DD	
57	3-733-912-01	SCREW (M2X2.5), SPECIAL HEAD	
58	*1-633-600-11	LI-12 BOARD	
59	1-550-104-32	HOLDER, BATTERY	
60	3-742-835-11	COVER	
61	*1-633-593-11	MJ-23 BOARD	
62	3-742-829-01	TABLE, TRIPOD	
63	3-742-743-01	PLATE, BLIND, TRIPOD	
64	*A-7062-059-A	FD-13 BOARD, COMPLETE	
65	1-633-612-11	FP-213 FLEXIBLE BOARD	
66	1-633-613-11	FP-215 FLEXIBLE BOARD	
67	3-742-806-01	KNOB, LEVEL	
68	3-742-805-01	KNOB, BAL	
69	X-3742-709-1	KNOB ASSY, RV	
70	3-742-792-01	KNOB, SHUTTER	
71	3-742-723-01	KNOB, IRIS	
72	3-742-758-01	PLATE, BLIND, IRIS	
73	*3-742-755-01	PLATE, SHIELD, VR	
74	4-356-741-11	SCREW, TAPPING (BIND 2X6)	
75	*1-633-603-11	DK-3 BOARD	
76	3-742-799-01	HOLDER (R), MD	
77	4-356-741-31	SCREW, TAPPING (BIND 2X8)	
78	1-542-138-11	MICROPHONE ASSY, NARATION	79, 80
79	1-542-139-11	CAPSULE (C-1025), MICROPHONE	
80	1-572-213-11	SWITCH, LEAF	
81	*1-633-607-11	LR-11 BOARD	
82	*1-633-606-11	LL-1 BOARD	
83	3-742-801-01	RETAINER, METER	
84	1-520-499-41	METER, LEVEL	
85	3-742-811-01	BRACKET, SP	
86	1-503-293-00	SPEAKER	
87	3-742-886-11	SCREW (M2X6), +B	
88	X-3742-719-1	CABINET (R) SUB ASSY	89-92
89	X-3742-728-1	DOOR ASSY, FUNCTION	90
90	3-742-830-01	DOOR, FUNCTION	
91	3-718-233-01	NUT, PLATE	
92	3-732-705-01	SPRING, LEAF	

5-3. CABINET (UPPER) ASSEMBLY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128
124
108
109
110
B2.5×6
111
not supplied
131
132
106
105
104
103
not supplied
BTP2.6×10
115
BTP2.6×10
107
STEEL BALL
2.5
PTP2×5
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P2×4
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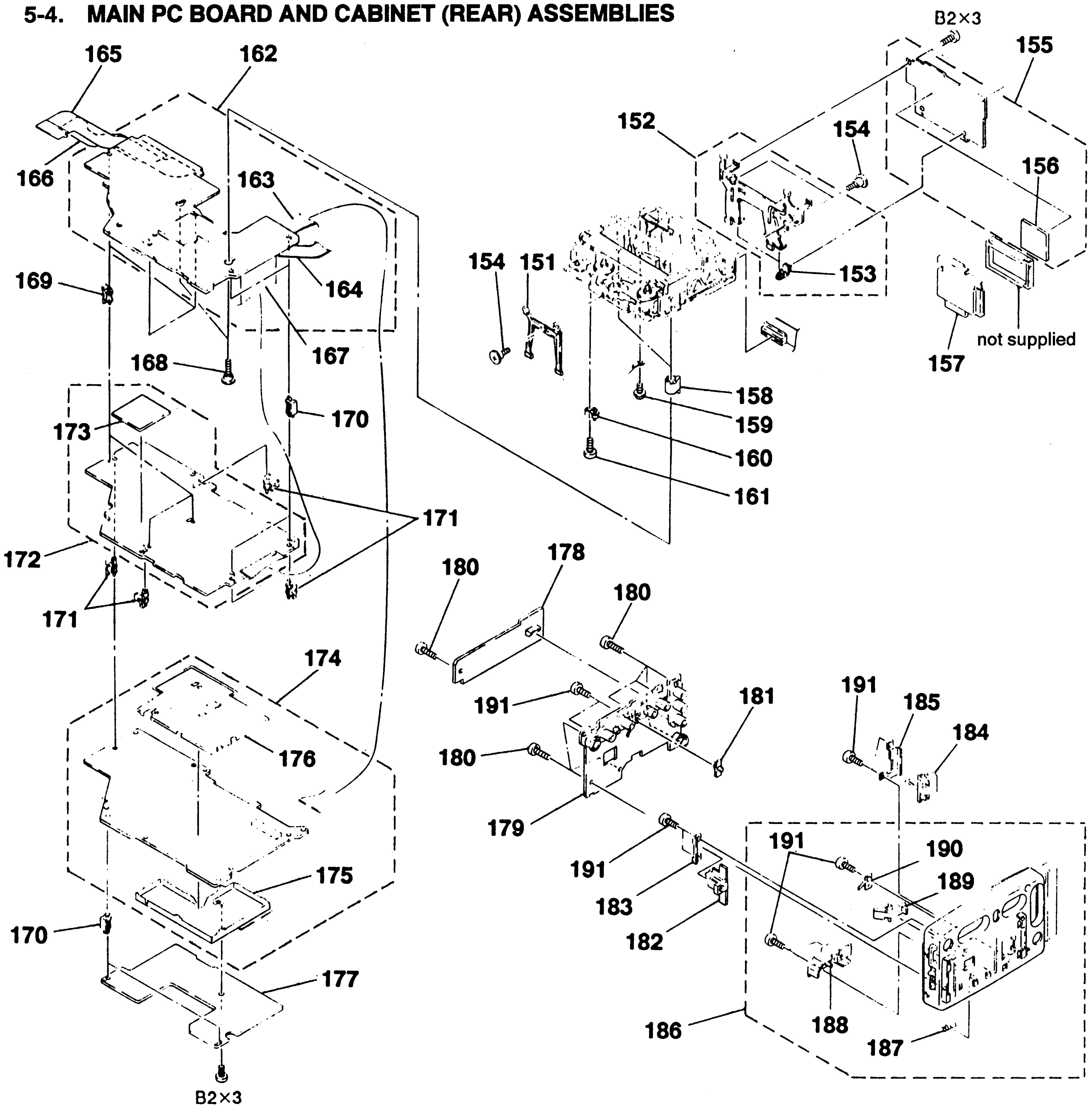
No.	Part No.	Description	Remark
101	X-3742-721-1	CABINET (UPPER) SUB ASSY	102-122
102	3-730-745-11	SCREW (2.6X4), +P	
103	3-742-707-01	SHOE, VF	
104	3-742-836-01	TABLE, ROTARY	
105	3-688-981-01	WASHER, ROTARY TABLE	
106	3-742-716-01	SPACER, DM	
107	3-742-803-01	STOPPER, ROTARY TABLE	
108	3-742-735-01	RETAINER, ROTARY TABLE	
109	3-742-736-01	SPRING	
110	3-730-745-21	SCREW (2.6X6), +P	
111	3-742-748-01	SHAFT (A)	
112	3-742-871-01	SCREW (M2X5)	
113	3-724-511-01	SHOE, ACCESSORY	
114	3-742-827-01	HANDLE	
115	3-742-787-01	BRACKET, HANDLE	
116	3-742-786-01	LID, UPPER	
117	3-718-226-01	BUTTON, POWER	
118	*3-718-257-11	BUTTON, PUSH, POWER	
119	3-303-973-00	SPRING, COMPRESSION	
120	3-718-227-01	PLATE, BLIND, POWER	
121	3-742-715-01	SPRING (U), LEAF	
122	3-718-233-01	NUT, PLATE	
123	X-2536-717-1	SCREEN, WIND	
124	3-742-834-01	HOLDER, MICROPHONE	
125	1-542-137-11	MICROPHONE, STEREO (C-2028)	123
126	3-742-855-01	SCREW (M2X6) (THREE LOCK), +B	
127	4-356-741-31	SCREW, TAPPING (BIND 2X8)	
128	*1-633-605-11	IR-20 BOARD	
129	*1-633-602-11	CK-18 BOARD	
130	*1-633-604-11	VK-2 BOARD	
131	1-575-436-11	WIRE, FLAT TYPE PVC (10 CORE)	
132	4-356-741-11	SCREW, TAPPING (BIND 2X6)	

5-4. MAIN PC BOARD AND CABINET (REAR) ASSEMBLIES


B2×3
165
162
155
152
154
166
163
156
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151
169
164
153
157
not supplied
168
167
158
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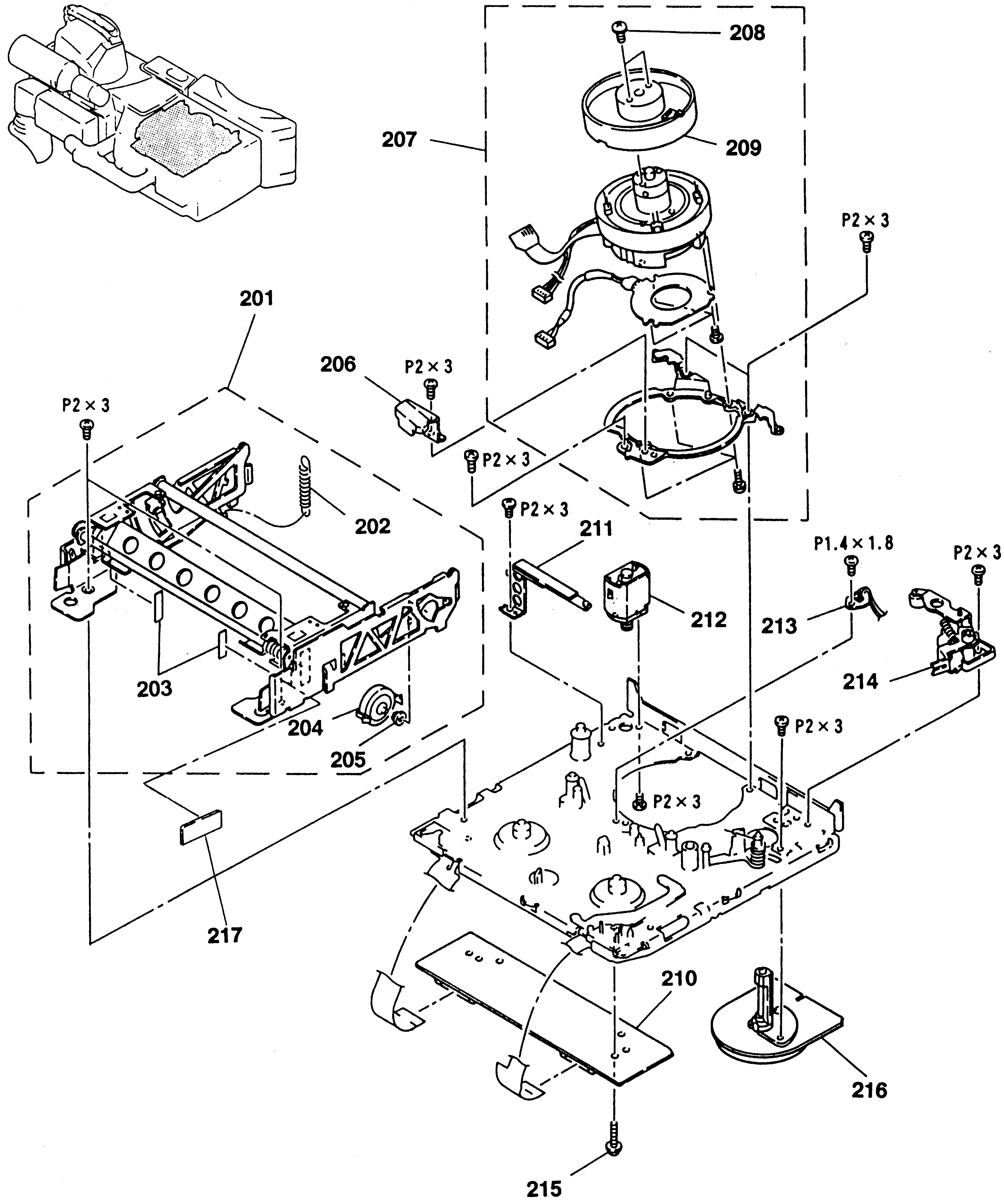
B2×3

No.	Part No.	Description	Remark
151	X-3742-707-1	FRAME (UPPER) ASSY, MD	
152	X-3742-716-1	FRAME (LOWER) ASSY, MD	153
153	3-742-810-01	HINGE (D), PC BOARD	
154	3-732-791-11	SCREW (M2X3)	
155	*A-7061-981-A	MR-19 BOARD, COMPLETE	156
156	A-7068-142-A	HR-3 BOARD, COMPLETE (HIC)	
157	*3-732-793-01	LID, RP	
158	3-732-767-01	SPACER (B), PC BOARD	
159	3-703-502-01	SCREW	
160	3-732-766-01	SPACER (A), PC BOARD	
161	3-713-790-11	SCREW (M2X5), TAPPING, P3	
162	*A-7061-977-A	SS-95 BOARD, COMPLETE	163, 164
163	1-633-614-11	FP-216 FLEXIBLE BOARD (W002)	
164	1-633-616-11	FP-240 FLEXIBLE BOARD (W004)	
165	1-633-617-11	FP-241 FLEXIBLE BOARD	
166	1-633-618-11	FP-311 FLEXIBLE BOARD	
167	1-629-777-11	FP-203 FLEXIBLE BOARD	
168	3-742-713-01	SCREW (M2X8), TAPPING	
169	3-742-815-01	SUPPORT (S), PC BOARD	
170	3-742-817-01	HINGE (S), PC BOARD	
171	3-742-816-01	SUPPORT (V), PC BOARD	
172	*A-7061-978-A	VI-66 BOARD, COMPLETE	173
173	A-7068-168-A	HD-8 BOARD, COMPLETE (HIC)	
174	*A-7061-979-A	PC-35 BOARD, COMPLETE	175, 176
175	*X-3742-723-1	CASE ASSY, SHIELD, PC	
176	*X-3742-724-1	LID ASSY, PC SHIELD	
177	*A-7061-980-A	AS-22 BOARD, COMPLETE	
178	*1-633-596-11	FU-70 BOARD	
179	*A-7061-982-A	PJ-22 BOARD, COMPLETE	
180	4-356-741-31	SCREW, TAPPING (BIND 2X8)	
181	3-742-714-01	KNOB, AUDIO SELECTION	
182	*1-633-597-11	DC-25 BOARD	
183	*3-742-745-01	BRACKET, DC	
184	1-537-241-61	TERMINAL BOARD (BATTERY)	
185	*3-742-711-01	PLATE, FIXED, TERMINAL	
186	X-3742-713-1	CABINET (REAR) SUB ASSY	187-191
187	4-876-347-01	SPRING, COMPRESSION	
188	3-742-772-01	COVER, BATTERY LOCK	
189	3-742-770-01	LOCK, BATTERY	
190	3-742-712-01	SPRING	
191	4-356-741-11	SCREW, TAPPING (BIND 2X6)	

5-5. MECHANISM CHASSIS ASSEMBLY (1)


208
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P2×3
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P2×3
P2×3
P2×3
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P2×3
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P1.4×1.8
P2×3
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P2×3
P2×3
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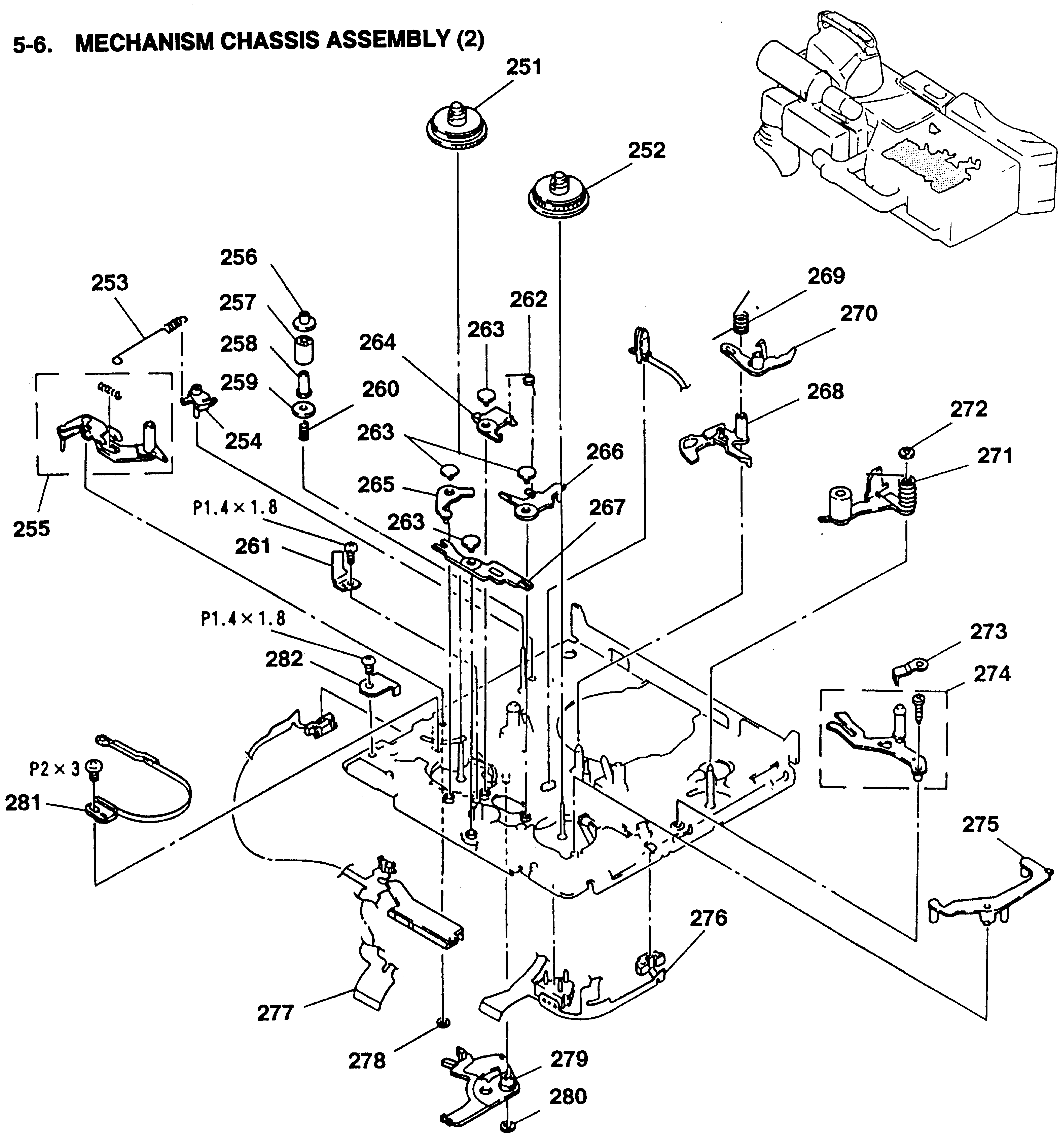
No.	Part No.	Description	Remark
201	X-3728-873-1	CASSETTE COMPARTMENT ASSY	202-205
202	3-728-825-03	SPRING, TENSION	
203	*3-728-829-01	TAPE	
204	3-728-867-02	DAMPER, OIL	
205	3-739-806-02	GEAR (2), DAMPER	
206	3-728-868-01	GUARD, GUIDE	
207	A-7048-335-A	DRUM ASSY (DGU-59A-R)	208, 209
208	3-686-493-01	SCREW (M2X5), P1	
209	A-7049-285-A	DRUM ASSY, UPPER, ROTARY (DGU-59-R)	
210	*1-633-589-11	CC-27 BOARD	
211	X-3728-864-1	GROUND ASSY, SHAFT	
212	A-7040-160-A	MOTOR ASSY, THREADING (LOADING) (M903)	
213	1-808-505-12	SENSOR (DEW)	
214	A-7040-161-B	ROLLER BLOCK ASSY, HC	
215	3-713-790-11	SCREW (M2X5), TAPPING, P3	
216	8-835-331-01	MOTOR, DC U-22A (CAPSTAN) (M902)	
217	*3-730-176-01	SHEET, MD	

5-6. MECHANISM CHASSIS ASSEMBLY (2)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P1.4×1.8
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P2×3
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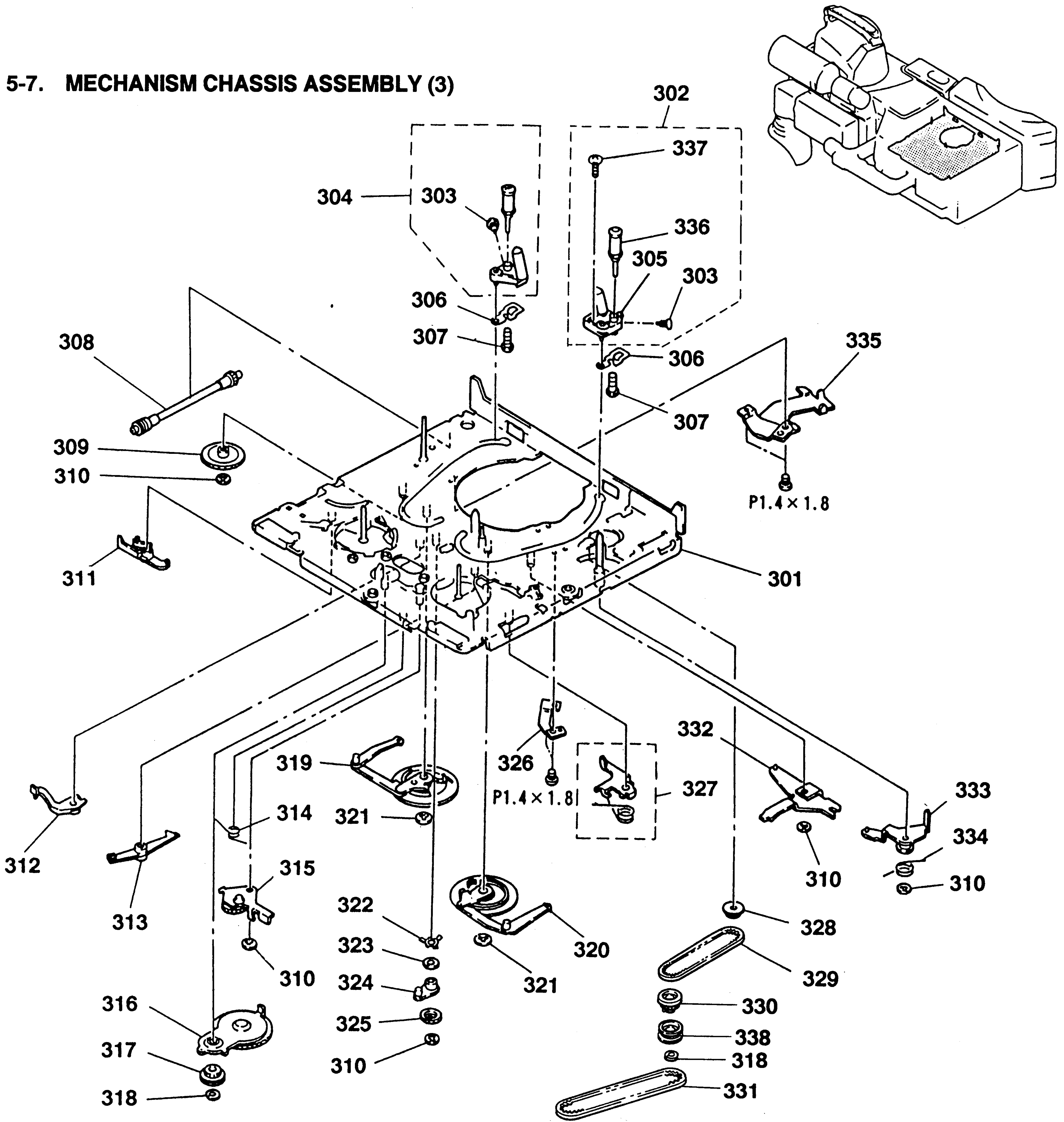
No.	Part No.	Description	Remark
251	X-3728-851-1	TABLE ASSY, REEL, S	
252	X-3728-855-1	TABLE ASSY, REEL, T	
253	3-736-414-01	SPRING, TENSION	
254	3-728-855-03	ARM, ADJUSTMENT	
255	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR	
256	3-726-884-01	FLANGE, UPPER, TG2	
257	3-726-883-01	ROLLER, TG2	
258	3-726-885-01	SLEEVE, TG2	
259	3-726-882-02	FLANGE, LOWER, TG2	
260	3-726-886-01	SPRING, COMPRESSION	
261	3-726-848-01	RETAINER, TL	
262	3-726-866-01	SPRING (ST), TORSION	
263	3-726-858-01	PIN, SHAFT RETAINER	
264	3-728-849-01	BRAKE, S	
265	3-726-852-01	BRAKE, LB	
266	3-728-850-01	BRAKE, T	
267	3-726-853-01	LEVER, LB	
268	3-728-875-01	STOPPER, RK	
269	3-726-864-01	SPRING (RK), TORSION	
270	3-728-852-02	ARM, RK STOPPER	
271	A-7040-219-A	ARM BLOCK ASSY, PINCH	
272	3-669-465-00	WASHER (1.5), STOPPER	
273	3-728-808-01	SPRING, LEAF	
274	X-3728-869-1	ARM ASSY, TG7	
275	3-728-848-01	ARM, LB RELEASE	
276	1-628-061-12	FP-90 FLEXIBLE BOARD	
277	1-628-060-12	FP-89 FLEXIBLE BOARD	
278	3-321-393-11	WASHER, STOPPER	
279	X-3726-806-2	LEVER ASSY, SW	
280	3-726-829-01	WASHER, STOPPER	
281	X-3726-809-2	BAND ASSY, TENSION REGULATOR	
282	3-730-125-01	RETAINER, SW	

5-7. MECHANISM CHASSIS ASSEMBLY (3)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P1.4×1.8
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P1.4×1.8
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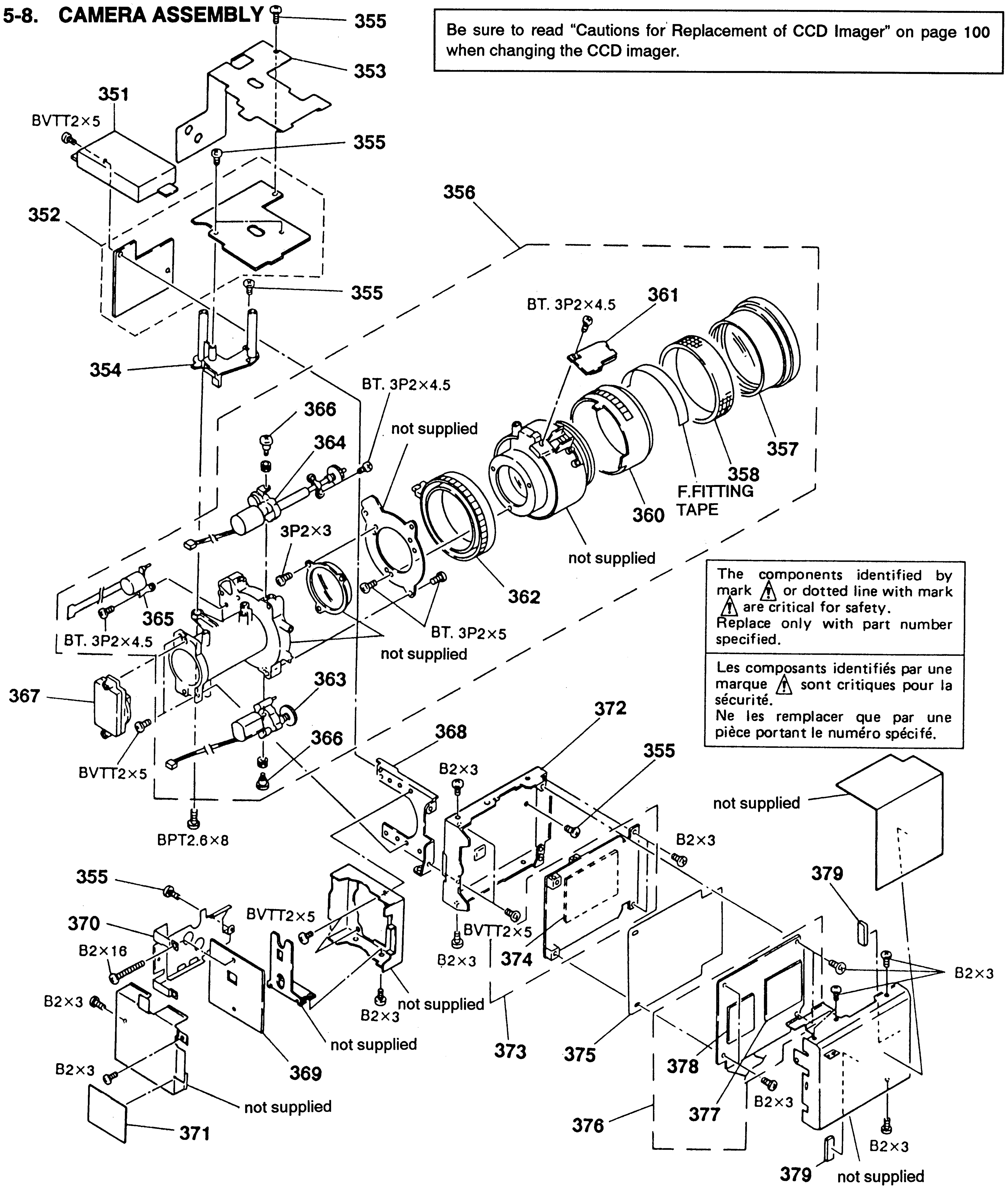
No.	Part No.	Description	Remark
301	*X-3728-801-1	CHASSIS ASSY, MECHANICAL	
302	A-7040-220-A	COASTER (RIGHT) BLOCK ASSY-N1P	303, 305 336, 337
303	3-726-822-01	SCREW (M1.4X2) (STEP), HEAD	
304	A-7040-204-A	COASTER (LEFT) BLOCK ASSY	303
305	X-3728-852-1	COASTER (RIGHT) ASSY	
306	3-736-485-01	SPRING, LEAF, COSTER	
307	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
308	X-3728-868-1	WORM ASSY	
309	3-744-109-01	GEAR, WHEEL	
310	3-726-829-01	WASHER, STOPPER	
311	3-728-842-01	LEVER, EJECT	
312	3-728-851-01	BRAKE, UL	
313	3-726-854-01	ARM, BRAKE RELEASE	
314	3-726-865-01	SPRING (LB), TORSION	
315	A-7040-130-A	GEAR BLOCK ASSY, LB	
316	X-3728-866-1	GEAR ASSY, RK	
317	X-3728-858-1	GEAR ASSY, RC	
318	3-321-393-11	WASHER, STOPPER	
319	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	
320	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
321	3-669-465-00	WASHER (1.5), STOPPER	
322	3-726-867-01	SPRING, LEAF	
323	3-701-436-21	WASHER, POLYEHTHYLENE	
324	3-726-857-02	ARM, UL	
325	3-726-856-02	GEAR, UL	
326	*3-726-805-01	REINFORCEMENT (TT)	
327	X-3726-808-2	BRAKE ASSY, TS	
328	X-3726-805-1	GEAR ASSY, JOINT	
329	3-728-866-11	BELT (S), TIMING	
330	X-3726-838-1	PULLEY (UPPER) ASSY, MIDWAY	
331	3-741-197-01	BELT (L), TIMING	
332	3-744-145-01	LEVER, THREADING	
333	X-3726-824-1	ARM ASSY, PINCH SUB	
334	3-726-895-01	SPRING	
335	X-3726-841-1	REINFORCEMENT (SS) ASSY	
336	X-3728-810-1	ROLLER ASSY (U)(PLATING), GUIDE	
337	3-736-473-01	SCREW (M2X0.25) (THREE LOCK)	
338	3-741-196-01	PULLEY (LOWER), BELT MIDWAY	

5-8. CAMERA ASSEMBLY

Be sure to read "Cautions for Replacement of CCD Imager" on page 100 when changing the CCD imager.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BVTT2×5
355
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361
BT. 3P2×4.5
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BT. 3P2×4.5
366
not supplied
364
357
358
F.FITTING TAPE
360
3P2×3
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362
365
BT. 3P2×4.5
BT. 3P2×5
not supplied
367
363
372
368
366
BVTT2×5
B2×3
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BPT2.6×8
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B2×3
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355
370
BVTT2×5
B2×16
BVTT2×5
B2×3
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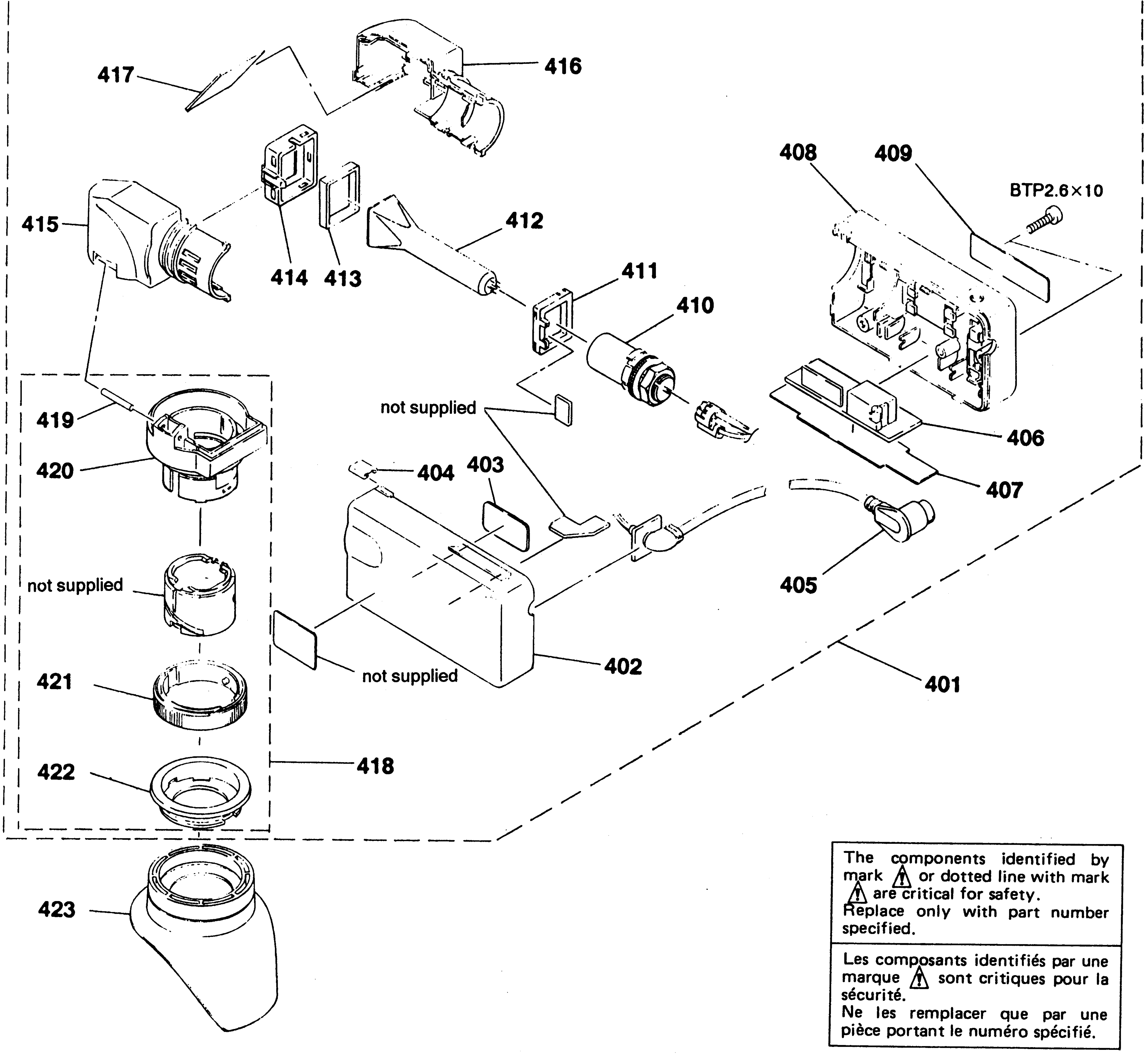
B2×3
B2×3
not supplied
B2×3
not supplied
373
375
378
369
B2×3
B2×3
not supplied
377
376
371
B2×3
379
not supplied

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

No.	Part No.	Description	Remark
351	⚠1-466-063-21	UNIT, DC-DC CONVERTER 1	
352	*A-7030-171-A	AF-DM ASSY	
353	*3-734-482-01	PLATE, SHIELD, FC	
354	3-742-819-01	SUPPORT (S), LENS	
355	3-727-903-01	SCREW (2X5), TAPPING, + B	
356	1-547-334-13	LENS, ZOOM (VCL-1108YB)	357-366
357	3-707-577-01	RING UNIT, F	
358	3-707-575-01	RUBBER, FOCUS	
360	3-707-578-01	SCALE RING, F	
361	3-707-763-01	SENSOR ASSY, F	
362	3-707-582-01	RING ASSY, ZOOM	
363	3-707-580-01	MOTOR ASSY, PZ GEAR (ZOOM)	
364	3-707-576-01	MOTOR ASSY, AF GEAR (FOCUS)	
365	3-707-583-01	METER ASSY, EE (IRIS)	
366	3-707-501-01	SCREW (Z) MOTOR FITTING	
367	8-750-011-83	IU022BN-10C (CCD IMAGER)	
368	*3-732-773-01	BRACKET, CCD	
369	*A-7071-007-A	CD-13 BOARD, COMPLETE	
370	*3-734-421-01	HEAT SINK, CD	
371	*3-734-481-01	PLATE	
372	*X-3732-708-1	CASE ASSY, SHIELD, CAMERA	
373	*A-7062-068-A	VC-54 BOARD, COMPLETE	374
374	A-7068-143-A	DT-73B BOARD, COMPLETE (HIC)	
375	*3-734-467-01	PLATE, SHIELD, VC	
376	*A-7062-069-A	VC-55 BOARD, COMPLETE	377, 378
377	A-7068-144-A	MX-7 BOARD, COMPLETE (HIC)	
378	A-7068-145-A	CP-20 BOARD, COMPLETE (HIC)	
379	*3-734-418-01	PROTECTOR, HIC	

5-9. EVF ASSEMBLY


417
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BTP2.6×10
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not supplied
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not supplied
421
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401
418
422
not supplied
423

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark
401	A-7019-204-A	VF-263 ASSY	402-422
402	X-3742-701-1	CASE (UPPER) ASSY, VF	
403	*3-704-233-01	LABEL, CAUTION, HIGH VOLTAGE (US/Canadian MODEL)	
404	3-742-709-01	PLATE, ORNAMENTAL	
405	1-575-441-11	CORD, CONNECTION (WITH 8P PLUG)	
406	*A-7062-060-A	VF-13 BOARD, COMPLETE	
407	*3-742-752-01	INSULATOR, VF	
408	X-3742-712-1	CASE (LOWER) ASSY, VF	
409	*3-742-885-01	LABEL, MODEL NUMBER, EVF (U/C)	
410	⚠1-451-357-12	DEFLECTION YOKE	
411	3-742-767-01	RETAINER, CRT	
412	⚠1-546-084-11	CATHODE-RAY TUBE, B/W (C1M50P45)	(V901)
413	3-742-705-01	BUSHING, CRT	
414	X-3742-711-1	COVER ASSY, CRT	
415	X-3742-703-1	HOLDER (UPPER) ASSY, CRT	
416	X-3742-704-1	HOLDER (LOWER) ASSY, CRT	
417	3-742-710-01	MIRROR, REFLECTION	
418	A-7091-150-A	TABLE ASSY, LENS	419-422
419	3-742-740-01	SHAFT, ROTARY	
420	3-742-822-01	TABLE, LENS	
421	3-742-766-01	RING, ADJUSTMENT	
422	3-742-769-01	HOLDER, EYE CUP	
423	3-742-804-01	EYE CUP	

SECTION 6
ELECTRICAL PARTS LIST

SS-95

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- –XX, –X mean standardized parts, so they may have some difference from the original one.
- SEMICONDUCTORS
  In each case, U : μ, for example:
  UA...: μA..., UPA...: μPA..., UPB...: μPB..., UPC...: μPC..., UPD...: μPD...
- CAPACITORS
  MF : μF, PF : μμF
- COILS
  MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
	*A-7061-977-A	SS-95 BOARD, COMPLETE (Ref.No 5000 Series) ***********************			
	1-562-880-11	CONNECTOR, CARD EDGE 15P			
		CAPACITOR			
C001	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C002	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C003	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C004	1-135-155-21	TANTAL. CHIP	4.7MF	20%	16V
C005	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C006	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C007	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C008	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C009	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C010	1-135-162-21	TANTAL. CHIP	33MF	20%	6.3V
C011	1-135-155-21	TANTAL. CHIP	4.7MF	20%	16V
C012	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C013	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C014	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C015	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C016	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C017	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C018	1-135-072-21	TANTAL. CHIP	0.22MF	20%	35V
C019	1-163-009-11	CERAMIC CHIP	0.001MF		50V
C070	1-163-205-00	CERAMIC CHIP	0.001MF	5%	50V
C072	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C073	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C075	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C076	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C077	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C101	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C102	1-124-257-00	ELECT	2.2MF	20%	35V
C103	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C104	1-124-257-00	ELECT	2.2MF	20%	35V
C105	1-126-157-11	ELECT	10MF	20%	16V
C106	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C107	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C108	1-126-157-11	ELECT	10MF	20%	16V
C109	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C110	1-124-257-00	ELECT	2.2MF	20%	35V
C111	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C112	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C113	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C114	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C115	1-126-151-11	ELECT	4.7MF	20%	16V
C116	1-124-257-00	ELECT	2.2MF	20%	35V
C117	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C118	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C119	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C161	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C162	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C163	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C164	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C166	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C167	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C168	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C169	1-126-157-11	ELECT	10MF	20%	16V
C170	1-124-465-00	ELECT	0.47MF	20%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C172	1-126-157-11	ELECT	10MF	20%	16V
C173	1-124-465-00	ELECT	0.47MF	20%	50V
C200	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C202	1-135-149-21	TANTAL. CHIP	2.2MF	20%	10V
C203	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V
C204	1-124-779-00	ELECT CHIP	10MF	20%	16V
C205	1-124-779-00	ELECT CHIP	10MF	20%	16V
C206	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C207	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C208	1-124-779-00	ELECT CHIP	10MF	20%	16V
C209	1-135-159-21	TANTAL. CHIP	10MF	20%	16V
C211	1-127-539-11	ELECT(SOLID)	1MF	20%	25V
C212	1-135-177-21	TANTAL. CHIP	1MF	20%	20V
C213	1-135-154-21	TANTAL. CHIP	3.3MF	20%	20V
C214	1-162-638-11	CERAMIC CHIP	1MF		16V
C215	1-124-779-00	ELECT CHIP	10MF	20%	16V
C216	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C217	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C218	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C219	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C220	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C221	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C222	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C223	1-136-718-11	FILM CHIP	0.1MF	5%	25V
C224	1-124-589-11	ELECT	47MF	20%	16V
C225	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C226	1-163-023-00	CERAMIC CHIP	0.015MF		50V
C227	1-135-070-00	TANTAL. CHIP	0.1MF	20%	35V
C228	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C229	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C230	1-135-070-00	TANTAL. CHIP	0.1MF	20%	35V
C231	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C232	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C233	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C234	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C235	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C236	1-127-558-11	ELECT(SOLID)	10MF	20%	10V
C237	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C238	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C239	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C240	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C241	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C242	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C244	1-135-154-21	TANTAL. CHIP	3.3MF	20%	20V
C245	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C246	1-163-038-00	CERAMIC CHIP	0.1MF		25V

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Ref.No	Part No.	Description		Remark
C310	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C311	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C312	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C313	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C314	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C315	1-162-638-11	CERAMIC CHIP 1MF		16V
C316	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C317	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C318	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C319	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C320	1-163-125-00	CERAMIC CHIP 220PF	10%	50V
C321	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C322	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V
C323	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C324	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C325	1-163-077-00	CERAMIC CHIP 0.1MF	10%	25V
C326	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V
C327	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V
C328	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C329	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C330	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C331	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C332	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C333	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C334	1-162-638-11	CERAMIC CHIP 1MF		16V
C335	1-162-638-11	CERAMIC CHIP 1MF		16V
C336	1-163-059-00	CERAMIC CHIP 0.01MF	10%	50V
		CONNECTOR		
CN002	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P		
CN003	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P		
CN201	*1-566-197-61	PIN, CONNECTOR (PC BOARD) 4P		
CN202	*1-566-197-21	PIN, CONNECTOR (PC BOARD) 4P		
CN220	1-563-585-11	CONNECTOR, FLEXIBLE 8P		
CN221	*1-563-584-11	CONNECTOR, FLEXIBLE 7P		
CN222	1-568-123-11	CONNECTOR, FPC(SMT TYPE ZIF)18P		
CN224	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P		
CN225	*1-566-766-11	PIN, CONNECTOR (PC BOARD) 11P		
CN228	*1-566-759-11	PIN, CONNECTOR (PC BOARD) 4P		
CN230	1-566-760-11	PIN, CONNECTOR (PC BOARD) 5P		
		TRIMMER		
CT101	1-141-404-11	CAP, VAR, TRIMMER (30PF)		
CT161	1-141-331-11	CAP, VAR, TRIMMER (CHIP) (30PF)		
		DIODE		
D005	8-719-104-31	DIODE MA152WK		
D026	8-719-940-45	DIODE DWA010		
D030	8-719-104-34	DIODE 1S2836		
D101	8-719-420-36	DIODE MA151A		
D102 ⚠	8-719-938-72	DIODE SB01-05CP		
D103	8-719-420-36	DIODE MA151A		

Ref.No	Part No.	Description	Remark
D105	8-719-940-45	DIODE DWA010	
D161	8-713-300-88	DIODE 1T33C-01	
D200	8-719-938-75	DIODE SB05-05CP	
D201	8-719-938-75	DIODE SB05-05CP	
D202	8-719-104-34	DIODE 1S2836	
		IC	
IC001	8-752-809-71	IC CXP80116-646Q	
IC002	8-759-804-72	IC LB1631M	
IC003	8-759-013-22	IC LM358M	
IC005	8-759-009-51	IC MC14538BF	
IC101	8-759-145-48	IC UPD75316GF-041-3B9	
IC102	8-759-145-63	IC UPD7564G-540	
IC103	8-759-937-54	IC S-81250HG-RD-S	
IC104	8-759-946-03	IC S-8054ALR-LN-S	
IC161	8-759-983-52	IC MB87484	
IC162	8-752-326-24	IC CXK58257M-12L	
IC200	8-759-107-68	IC CX20115A	
IC201	8-759-202-45	IC CX20114	
IC202	8-759-805-06	IC CXA1127M	
IC203	8-759-100-94	IC UPC358G2	
IC204	8-759-945-17	IC MB3775PF	
IC310	8-752-050-54	IC CXA1449Q	
		COIL	
L001	1-412-058-11	INDUCTOR CHIP 10UH	
L101	1-410-393-11	INDUCTOR CHIP 100UH	
L102	1-410-369-11	INDUCTOR CHIP 1UH	
L161	1-410-384-31	INDUCTOR CHIP 18UH	
L162	1-410-369-11	INDUCTOR CHIP 1UH	
L163	1-410-377-31	INDUCTOR CHIP 4.7UH	
L200	1-412-058-11	INDUCTOR CHIP 10UH	
L201	1-424-104-11	COIL, CHOKE 10UH	
L202	1-424-106-11	COIL, CHOKE 47UH	
L203	1-424-105-11	COIL, CHOKE 22UH	
L310	1-412-058-11	INDUCTOR CHIP 10UH	
L311	1-408-795-21	INDUCTOR CHIP 330UH	
L312	1-412-058-11	INDUCTOR CHIP 10UH	
		TRANSISTOR	
Q001	8-729-100-66	TRANSISTOR 2SC1623	
Q003	8-729-100-66	TRANSISTOR 2SC1623	
Q005	8-729-907-00	TRANSISTOR DTC114EU	
Q006	8-729-104-95	TRANSISTOR 2SB1040A-5	
Q007	8-729-905-35	TRANSISTOR 2SC4081-R	
Q008	8-729-905-35	TRANSISTOR 2SC4081-R	
Q010	8-729-900-52	TRANSISTOR DTC114YK	
Q011	8-729-900-52	TRANSISTOR DTC114YK	
Q012	8-729-901-01	TRANSISTOR DTC144EK	
Q013	8-729-402-81	TRANSISTOR XN4501	
Q014	8-729-905-35	TRANSISTOR 2SC4081-R	
Q020	8-729-901-06	TRANSISTOR DTA144EK	
Q021	8-729-901-01	TRANSISTOR DTC144EK	

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q023	8-729-920-39	TRANSISTOR IMT1US	
Q030	8-729-402-42	TRANSISTOR UN5213	
Q101	8-729-402-78	TRANSISTOR XN6401	
Q102	8-729-402-19	TRANSISTOR XN6501	
Q103	8-729-402-78	TRANSISTOR XN6401	
Q104	8-729-216-22	TRANSISTOR 2SA1162	
Q105	⚠8-729-109-44	TRANSISTOR 2SK94	
Q106	8-729-901-03	TRANSISTOR DTC144WK	
Q107	8-729-100-66	TRANSISTOR 2SC1623	
Q108	8-729-901-06	TRANSISTOR DTA144EK	
Q109	8-729-904-20	TRANSISTOR FMA2	
Q110	8-729-903-30	TRANSISTOR DTC114TK	
Q111	8-729-901-01	TRANSISTOR DTC144EK	
Q112	8-729-109-44	TRANSISTOR 2SK94	
Q113	8-729-902-96	TRANSISTOR FMS1	
Q114	8-729-903-82	TRANSISTOR FMW2	
Q115	8-729-100-66	TRANSISTOR 2SC1623	
Q116	8-729-901-01	TRANSISTOR DTC144EK	
Q161	8-729-901-01	TRANSISTOR DTC144EK	
Q200	8-729-403-35	TRANSISTOR UN5113	
Q201	8-729-216-22	TRANSISTOR 2SA1162	
Q202	8-729-905-35	TRANSISTOR 2SC4081-R	
Q203	8-729-403-35	TRANSISTOR UN5113	
Q204	8-729-905-61	TRANSISTOR DTC124EU	
Q205	8-729-402-42	TRANSISTOR UN5213	
Q206	8-729-100-66	TRANSISTOR 2SC1623	
Q207	8-729-805-25	TRANSISTOR 2SB1121	
Q208	8-729-119-83	TRANSISTOR 2SC4175-B3	
Q209	8-729-805-25	TRANSISTOR 2SB1121	
Q210	8-729-162-13	TRANSISTOR 2SC1621	
Q211	8-729-901-01	TRANSISTOR DTC144EK	
Q212	8-729-920-39	TRANSISTOR IMT1US	
Q213	8-729-402-42	TRANSISTOR UN5213	
Q214	8-729-901-04	TRANSISTOR DTA114EK	
Q310	8-729-216-22	TRANSISTOR 2SA1162	
Q311	8-729-905-35	TRANSISTOR 2SC4081-R	
Q312	8-729-117-16	TRANSISTOR 2SA1611-M6	
Q313	8-729-905-35	TRANSISTOR 2SC4081-R	
Q314	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref.No	Part No.	Description				Remark
R001	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R005	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R006	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R010	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R011	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R013	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R014	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R015	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R019	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R020	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R021	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R022	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R023	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R024	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R025	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R026	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R027	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R028	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R029	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R030	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R031	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R032	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R033	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R034	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R035	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R036	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R037	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R038	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R039	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R040	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R041	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R042	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R043	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R044	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R045	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R046	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R047	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R052	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R053	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R054	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R055	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R056	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R059	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R070	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R071	1-216-700-11	METAL GLAZE	470K	1%	1/10W	
R072	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R073	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R074	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R075	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R076	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R077	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R078	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R080	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R101	1-218-172-11	METAL GLAZE	680K	1%	1/10W	
R102	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R103	1-218-172-11	METAL GLAZE	680K	1%	1/10W	
R104	1-216-097-00	METAL GLAZE	100K	1%	1/10W	
R105	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R106	1-216-111-00	METAL GLAZE	390K	5%	1/10W	
R107	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R108	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R109	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R110	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R111	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R112	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

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Ref.No	Part No.	Description				Remark
R113	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R114 ⚠	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R115	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R116	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R117	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R118	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R119	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R120	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R121	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R122	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R123	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R124	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R125	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R126	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R127	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R128	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R129	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R130	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R131	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R132	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R133	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R134	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R135	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R136	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R137	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R138	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R139	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R140	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R141	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R142	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R143	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R144	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R145	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R146	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R147	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R148	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R149	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R150	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R151	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R152	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R153	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R154	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R155	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R156	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R157	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R158	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R159	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R160	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R161	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R162	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R163	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R164	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R165	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R166	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R167	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R168	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R169	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R170	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R171	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R172	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R173	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R174	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R175	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R176	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R177	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R178	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R179	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R180	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R181	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R182	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R183	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R184	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R185	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R186	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R187	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R188	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R200	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R201	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R202	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R203	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R204	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R205	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R206	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R208	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R209	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R210	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R211	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R212	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R213	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R216	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R217	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R218	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R219	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R220	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R221	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R222	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R223	1-216-691-11	METAL CHIP	47K	0.50%	1/10W	
R224	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R225	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R226	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R227	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R228	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R229	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R230	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R231	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R232	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R233	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R234	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R235	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R236	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R237	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R238	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R239	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R240	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R241	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R242	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R243	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R244	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R245	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R246	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R247	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R248	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R249	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R250	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R251	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R252	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R253	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R254	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R281	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R282	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R283	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R310	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R311	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R312	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R313	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R314	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R315	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R316	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R317	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R318	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R322	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R323	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R324	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R325	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R326	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R327	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R328	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R329	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R330	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R331	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R332	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R333	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R335	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
R336	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R339	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R340	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R370	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R371	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R372	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	

Ref.No	Part No.	Description	Remark
R373	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R374	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R376	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R377	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R378	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R379	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R381	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R383	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R384	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R386	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R387	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R388	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R389	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R390	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R391	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R392	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R393	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R394	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R395	1-216-041-00	METAL GLAZE 470 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV001	1-238-225-11	RES, ADJ, METAL GLAZE 47K	
RV002	1-238-226-11	RES, ADJ, METAL GLAZE 100K	
RV200	1-238-228-11	RES, ADJ, METAL GLAZE 470K	
RV201	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV310	1-238-223-11	RES, ADJ, METAL GLAZE 10K	

THERMISTOR

Ref.No	Part No.	Description	Remark
TH001	1-800-200-00	THERMISTOR	

TERMINAL

Ref.No	Part No.	Description	Remark
TP003	*1-535-622-11	PIN, TERMINAL	
TP004	*1-535-622-11	PIN, TERMINAL	

FLEXIBLE BOARD

Ref.No	Part No.	Description	Remark
W002	1-633-614-11	FP-216 FLEXIBLE BOARD	
W004	1-633-616-11	FP-240 FLEXIBLE BOARD	
W006	1-574-880-11	WIRE, FLAT TYPE PVC (14 CORE)	

CRYSTAL

Ref.No	Part No.	Description	Remark
X001	1-577-116-21	VIBRATOR, CRYSTAL (16MHz)	
X101	1-577-291-11	VIBRATOR, CERAMIC (WITH (C))	
X102	1-527-997-21	VIBRATOR, CRYSTAL (32.768KHz)	
X103	1-567-884-11	OSCILLATOR, CERAMIC (700KHz)	
X310	1-567-735-11	VIBRATOR, CRYSTAL (5.94755MHz)	

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When indicating parts by reference number, please include the board name.

VI-66

Ref.No	Part No.	Description		Remark
	*A-7061-978-A	VI-66 BOARD, COMPLETE **********************		(Ref.No 4,000 Series)
	A-7068-168-A	HD-8 (HIC) BOARD, COMPLETE		
		CAPACITOR		
C251	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C252	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C253	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C254	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C255	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C259	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C260	1-162-952-11	CERAMIC CHIP 82PF	5%	50V
C262	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C264	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C265	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C266	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C267	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C268	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C269	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C270	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C271	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C272	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C273	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C274	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C275	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C276	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C277	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C278	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C279	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C402	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C403	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C405	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C406	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C407	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C408	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C409	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C411	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C412	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C413	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C414	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C415	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C416	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C417	1-162-997-11	CERAMIC CHIP 10PF	0.5PF	50V
C418	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C419	1-162-962-11	CERAMIC CHIP 470PF	10%	50V
C420	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C421	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C422	1-135-159-21	TANTAL. CHIP 10MF	20%	16V
C426	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C427	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C428	1-135-157-21	TANTAL. CHIP 10MF	20%	4V
C429	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C430	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C431	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C432	1-162-910-11	CERAMIC CHIP 5PF	0.25PF	50V
C433	1-162-923-11	CERAMIC CHIP 47PF	5%	50V
C434	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C435	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C436	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C437	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C438	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C439	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C440	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C441	1-163-010-11	CERAMIC CHIP 0.0012MF	10%	50V
C442	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C443	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C444	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C445	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C447	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C448	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C449	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C450	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C452	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C453	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C454	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C456	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C457	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C458	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C459	1-131-388-00	TANTALUM 68MF	10%	6.3V
C460	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C461	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C462	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C463	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C464	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C465	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C466	1-163-005-11	CERAMIC CHIP 470PF	10%	50V
C467	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C468	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C469	1-135-157-21	TANTAL. CHIP 10MF	20%	4V
C470	1-135-157-21	TANTAL. CHIP 10MF	20%	4V
C471	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C472	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C473	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C475	1-126-207-11	ELECT CHIP 33MF	20%	4V
C476	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C478	1-163-135-00	CERAMIC CHIP 560PF	5%	50V
C479	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C480	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C481	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C482	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C483	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C486	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C487	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C488	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C489	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C493	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C494	1-163-035-00	CERAMIC CHIP 0.047MF		50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C495	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C496	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C497	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C498	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C499	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C500	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C501	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C502	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C505	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C506	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C507	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C512	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C513	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C515	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C516	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C517	1-162-956-11	CERAMIC CHIP 180PF	5%	50V
C518	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C519	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C520	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C522	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C524	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C525	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C526	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C527	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C528	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C529	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C532	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C533	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C534	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C535	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C536	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C537	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C538	1-162-954-11	CERAMIC CHIP 120PF	5%	50V
C540	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C541	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C542	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C543	1-162-956-11	CERAMIC CHIP 180PF	5%	50V
C545	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C601	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C602	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V
C603	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C604	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C605	1-163-003-11	CERAMIC CHIP 330PF	10%	50V
C607	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C608	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C609	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C610	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C611	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C612	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C613	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C614	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C615	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C616	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C617	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C620	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C621	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C622	1-135-170-21	TANTAL. CHIP 6.8MF	20%	4V
C623	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C624	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C625	1-162-961-11	CERAMIC CHIP 330PF	10%	50V
C626	1-162-961-11	CERAMIC CHIP 330PF	10%	50V
C627	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C628	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C629	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C630	1-135-073-00	TANTAL. CHIP 0.33MF	20%	35V
C631	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C632	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C633	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C634	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C635	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C637	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C638	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C639	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C640	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C641	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C642	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C643	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C644	1-162-951-11	CERAMIC CHIP 68PF	5%	50V
C645	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C647	1-163-003-11	CERAMIC CHIP 330PF	10%	50V
C648	1-162-947-11	CERAMIC CHIP 33PF	5%	50V
C649	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C650	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C666	1-162-961-11	CERAMIC CHIP 330PF	10%	50V
C667	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C668	1-162-961-11	CERAMIC CHIP 330PF	10%	50V
C671	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C672	1-162-963-11	CERAMIC CHIP 680PF	10%	50V
C676	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C677	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C678	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C679	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C680	1-162-953-11	CERAMIC CHIP 100PF	5%	50V
C682	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C683	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C684	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C685	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C686	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C687	1-135-170-21	TANTAL. CHIP 6.8MF	20%	4V
C688	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C690	1-135-181-21	TANTAL. CHIP 4.7MF	20%	6.3V
C691	1-163-091-00	CERAMIC CHIP 8PF	0.25PF	50V
C692	1-162-917-11	CERAMIC CHIP 15PF	5%	50V
C702	1-162-950-11	CERAMIC CHIP 56PF	5%	50V
C703	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C704	1-163-035-00	CERAMIC CHIP 0.047MF		50V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description		Remark
C705	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C706	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C707	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C708	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C709	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C710	1-162-962-11	CERAMIC CHIP 470PF	10%	50V
C711	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C712	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C713	1-163-110-00	CERAMIC CHIP 51PF	5%	50V
C714	1-162-921-11	CERAMIC CHIP 33PF	5%	50V
C719	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C720	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C722	1-135-158-21	TANTAL. CHIP 15MF	20%	4V
C725	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C727	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C729	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C730	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C734	1-163-038-00	CERAMIC CHIP 0.1MF		25V

CONNECTOR

Ref.No	Part No.	Description
CN401	*1-565-882-11	PIN, CONNECTOR (PC BOARD) 10P
CN402	*1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P
CN404	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P
CN405	*1-566-766-11	PIN, CONNECTOR (PC BOARD) 11P
CN406	*1-565-543-31	PIN, CONNECTOR (PC BOARD) 4P
CN407	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P
CN408	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P
CN409	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P
CN410	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P
CN413	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P
CN414	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P

TRIMMER

Ref.No	Part No.	Description
CV401	1-141-331-11	CAP, VAR, TRIMMER (CHIP) (30PF)
CV402	1-141-331-11	CAP, VAR, TRIMMER (CHIP) (30PF)
CV601	1-141-311-11	CAP, VAR, TRIMMER (CHIP) (20PF)

DIODE

Ref.No	Part No.	Description
D251	8-719-941-86	DIODE DAN202U
D252	8-719-941-86	DIODE DAN202U
D253	8-719-941-86	DIODE DAN202U
D254	8-719-941-09	DIODE DAP202U
D256	8-719-941-86	DIODE DAN202U
D257	8-719-941-86	DIODE DAN202U
D258	8-719-941-86	DIODE DAN202U
D259	8-719-941-86	DIODE DAN202U
D260	8-719-941-86	DIODE DAN202U
D261	8-719-941-86	DIODE DAN202U
D263	8-719-941-86	DIODE DAN202U
D264	8-719-941-86	DIODE DAN202U
D266	8-719-941-86	DIODE DAN202U
D267	8-719-106-43	DIODE RD9.1M-B1
D401	8-719-941-86	DIODE DAN202U

Ref.No	Part No.	Description	Remark
D402	8-719-941-86	DIODE DAN202U	
D404	8-719-941-86	DIODE DAN202U	
D405	8-719-941-86	DIODE DAN202U	
D407	8-719-941-86	DIODE DAN202U	
D409	8-719-941-86	DIODE DAN202U	
D411	8-713-949-48	DIODE 1T32-2	
D413	8-719-941-86	DIODE DAN202U	
D414	8-719-941-86	DIODE DAN202U	
D418	8-719-800-76	DIODE 1SS226	
D419	8-719-941-86	DIODE DAN202U	
D420	8-719-941-86	DIODE DAN202U	
D421	8-719-941-86	DIODE DAN202U	
D422	8-719-941-86	DIODE DAN202U	
D423	8-719-941-86	DIODE DAN202U	
D424	8-719-941-86	DIODE DAN202U	
D425	8-719-941-86	DIODE DAN202U	
D609	8-719-941-86	DIODE DAN202U	
D614	8-719-800-76	DIODE 1SS226	
D616	8-719-404-40	DIODE MA121	
D620	8-719-941-86	DIODE DAN202U	

DELAY LINE

Ref.No	Part No.	Description
DL601	1-415-612-11	DELAY LINE, GLASS
DL603	1-415-652-11	DC (LC)

FILTER

Ref.No	Part No.	Description
FL401	1-236-370-11	LPF, DEMOD (Y)
FL402	1-236-371-11	LPF, REC (Y)
FL601	1-567-306-11	FILTER, CERAMIC
FL602	1-236-372-11	BPF (PB.C)
FL603	1-409-386-11	C E TRAP
FL604	1-236-373-11	BPF (REC.C)

IC

Ref.No	Part No.	Description
IC251	8-759-012-00	IC MC10H116M
IC401	8-759-710-09	IC NJM2233AM
IC403	8-759-710-29	IC NJM2235M
IC404	8-759-710-29	IC NJM2235M
IC405	8-759-009-22	IC MC14094BF
IC406	8-759-970-80	IC MB673198U
IC407	8-759-148-77	IC UPD6451GT-615
IC408	8-759-710-12	IC NJM2230M
IC409	8-752-031-01	IC CXA1047M
IC410	8-752-032-97	IC CXA1230AR
IC601	8-752-924-94	IC CX22021
IC602	8-752-003-22	IC CX20032
IC604	8-759-914-56	IC CX23054
IC605	8-759-710-07	IC NJM2234M
IC606	8-759-710-07	IC NJM2234M
IC609	8-759-925-60	IC BA401

When indicating parts by reference number, please include the board name.

COIL

Ref.No	Part No.	Description	Remark
L251	1-410-393-11	INDUCTOR CHIP 100UH	
L252	1-412-067-21	INDUCTOR CHIP 330UH	
L253	1-410-656-11	INDUCTOR CHIP 150UH	
L255	1-410-380-31	INDUCTOR CHIP 8.2UH	
L401	1-412-058-11	INDUCTOR CHIP 10UH	
L402	1-408-797-11	INDUCTOR CHIP 470UH	
L403	1-410-390-11	INDUCTOR CHIP 56UH	
L404	1-410-375-11	INDUCTOR CHIP 3.3UH	
L405	1-410-384-31	INDUCTOR CHIP 18UH	
L406	1-410-390-11	INDUCTOR CHIP 56UH	
L407	1-410-378-11	INDUCTOR CHIP 5.6UH	
L408	1-412-058-11	INDUCTOR CHIP 10UH	
L411	1-410-386-11	INDUCTOR CHIP 27UH	
L412	1-410-380-31	INDUCTOR CHIP 8.2UH	
L413	1-412-058-11	INDUCTOR CHIP 10UH	
L414	1-412-058-11	INDUCTOR CHIP 10UH	
L416	1-410-393-11	INDUCTOR CHIP 100UH	
L417	1-410-393-11	INDUCTOR CHIP 100UH	
L419	1-410-377-31	INDUCTOR CHIP 4.7UH	
L421	1-410-382-31	INDUCTOR CHIP 12UH	
L601	1-410-657-21	INDUCTOR CHIP 180UH	
L602	1-410-387-11	INDUCTOR CHIP 33UH	
L603	1-410-393-11	INDUCTOR CHIP 100UH	
L604	1-410-656-11	INDUCTOR CHIP 150UH	
L605	1-410-655-31	INDUCTOR CHIP 120UH	
L606	1-410-393-11	INDUCTOR CHIP 100UH	
L607	1-412-058-11	INDUCTOR CHIP 10UH	
L609	1-410-391-11	INDUCTOR CHIP 68UH	
L610	1-410-371-21	INDUCTOR CHIP 1.5UH	
L611	1-410-371-21	INDUCTOR CHIP 1.5UH	
L612	1-412-058-11	INDUCTOR CHIP 10UH	
L613	1-412-058-11	INDUCTOR CHIP 10UH	
L614	1-408-779-31	INDUCTOR CHIP 15UH	
L616	1-410-393-11	INDUCTOR CHIP 100UH	
L617	1-410-386-11	INDUCTOR CHIP 27UH	
L620	1-412-058-11	INDUCTOR CHIP 10UH	
L621	1-410-388-21	INDUCTOR CHIP 39UH	
L624	1-410-376-21	INDUCTOR CHIP 3.9UH	
L625	1-410-383-31	INDUCTOR CHIP 15UH	

VARIABLE COIL

Ref.No	Part No.	Description	Remark
LV601	1-459-547-11	COIL, VARIABLE 15UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q251	8-729-117-32	TRANSISTOR 2SC4177	
Q252	8-729-402-42	TRANSISTOR UN5213	
Q253	8-729-402-42	TRANSISTOR UN5213	
Q254	8-729-402-42	TRANSISTOR UN5213	
Q256	8-729-402-42	TRANSISTOR UN5213	
Q257	8-729-117-32	TRANSISTOR 2SC4177	
Q258	8-729-402-42	TRANSISTOR UN5213	
Q259	8-729-140-63	TRANSISTOR 2SA1611	
Q261	8-729-117-32	TRANSISTOR 2SC4177	
Q262	8-729-402-42	TRANSISTOR UN5213	
Q263	8-729-140-63	TRANSISTOR 2SA1611	
Q264	8-729-117-32	TRANSISTOR 2SC4177	
Q265	8-729-403-07	TRANSISTOR XN1213	
Q266	8-729-403-35	TRANSISTOR UN5113	
Q267	8-729-402-42	TRANSISTOR UN5213	
Q268	8-729-402-42	TRANSISTOR UN5213	
Q269	8-729-402-42	TRANSISTOR UN5213	
Q270	8-729-403-35	TRANSISTOR UN5113	
Q271	8-729-117-32	TRANSISTOR 2SC4177	
Q272	8-729-117-32	TRANSISTOR 2SC4177	
Q273	8-729-402-42	TRANSISTOR UN5213	
Q274	8-729-402-42	TRANSISTOR UN5213	
Q275	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q276	8-729-402-42	TRANSISTOR UN5213	
Q277	8-729-117-32	TRANSISTOR 2SC4177	
Q278	8-729-140-63	TRANSISTOR 2SA1611	
Q279	8-729-403-35	TRANSISTOR UN5113	
Q280	8-729-921-58	TRANSISTOR DTA144TU	
Q281	8-729-403-07	TRANSISTOR XN1213	
Q282	8-729-402-42	TRANSISTOR UN5213	
Q402	8-729-905-57	TRANSISTOR DTA124EU	
Q403	8-729-905-57	TRANSISTOR DTA124EU	
Q404	8-729-402-42	TRANSISTOR UN5213	
Q406	8-729-402-42	TRANSISTOR UN5213	
Q407	8-729-117-32	TRANSISTOR 2SC4177	
Q408	8-729-402-42	TRANSISTOR UN5213	
Q409	8-729-402-42	TRANSISTOR UN5213	
Q410	8-729-117-32	TRANSISTOR 2SC4177	
Q411	8-729-403-35	TRANSISTOR UN5113	
Q412	8-729-202-38	TRANSISTOR 2SC3326N	
Q415	8-729-402-42	TRANSISTOR UN5213	
Q416	8-729-402-42	TRANSISTOR UN5213	
Q417	8-729-402-42	TRANSISTOR UN5213	
Q418	8-729-402-42	TRANSISTOR UN5213	
Q419	8-729-402-42	TRANSISTOR UN5213	
Q420	8-729-403-35	TRANSISTOR UN5113	
Q422	8-729-140-63	TRANSISTOR 2SA1611	
Q424	8-729-202-38	TRANSISTOR 2SC3326N	
Q426	8-729-202-38	TRANSISTOR 2SC3326N	
Q427	8-729-117-32	TRANSISTOR 2SC4177	
Q428	8-729-420-20	TRANSISTOR XN4312	
Q429	8-729-117-32	TRANSISTOR 2SC4177	
Q430	8-729-216-22	TRANSISTOR 2SA1162	
Q431	8-729-402-42	TRANSISTOR UN5213	
Q432	8-729-402-42	TRANSISTOR UN5213	
Q433	8-729-403-35	TRANSISTOR UN5113	
Q434	8-729-117-32	TRANSISTOR 2SC4177	
Q437	8-729-905-09	TRANSISTOR DTA144WU	
Q438	8-729-117-32	TRANSISTOR 2SC4177	
Q439	8-729-117-32	TRANSISTOR 2SC4177	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
Q440	8-729-117-32	TRANSISTOR 2SC4177	
Q441	8-729-117-32	TRANSISTOR 2SC4177	
Q442	8-729-117-32	TRANSISTOR 2SC4177	
Q443	8-729-905-45	TRANSISTOR DTA143EU	
Q444	8-729-140-63	TRANSISTOR 2SA1611	
Q445	8-729-117-32	TRANSISTOR 2SC4177	
Q446	8-729-117-32	TRANSISTOR 2SC4177	
Q447	8-729-117-32	TRANSISTOR 2SC4177	
Q448	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q449	8-729-402-42	TRANSISTOR UN5213	
Q452	8-729-117-32	TRANSISTOR 2SC4177	
Q453	8-729-903-10	TRANSISTOR FMW1	
Q454	8-729-402-42	TRANSISTOR UN5213	
Q455	8-729-403-35	TRANSISTOR UN5113	
Q456	8-729-117-32	TRANSISTOR 2SC4177	
Q460	8-729-117-32	TRANSISTOR 2SC4177	
Q461	8-729-403-07	TRANSISTOR XN1213	
Q462	8-729-402-42	TRANSISTOR UN5213	
Q469	8-729-216-22	TRANSISTOR 2SA1162	
Q470	8-729-117-32	TRANSISTOR 2SC4177	
Q471	8-729-402-42	TRANSISTOR UN5213	
Q472	8-729-216-22	TRANSISTOR 2SA1162	
Q473	8-729-142-03	TRANSISTOR 2SC2223-F13	
Q474	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q475	8-729-140-63	TRANSISTOR 2SA1611	
Q476	8-729-117-32	TRANSISTOR 2SC4177	
Q477	8-729-117-32	TRANSISTOR 2SC4177	
Q478	8-729-140-63	TRANSISTOR 2SA1611	
Q479	8-729-403-35	TRANSISTOR UN5113	
Q480	8-729-402-42	TRANSISTOR UN5213	
Q481	8-729-403-35	TRANSISTOR UN5113	
Q482	8-729-402-42	TRANSISTOR UN5213	
Q483	8-729-402-42	TRANSISTOR UN5213	
Q485	8-729-140-63	TRANSISTOR 2SA1611	
Q486	8-729-140-63	TRANSISTOR 2SA1611	
Q487	8-729-402-42	TRANSISTOR UN5213	
Q488	8-729-905-57	TRANSISTOR DTA124EU	
Q489	8-729-905-57	TRANSISTOR DTA124EU	
Q490	8-729-402-42	TRANSISTOR UN5213	
Q491	8-729-140-63	TRANSISTOR 2SA1611	
Q492	8-729-402-42	TRANSISTOR UN5213	
Q493	8-729-402-42	TRANSISTOR UN5213	
Q497	8-729-402-42	TRANSISTOR UN5213	
Q498	8-729-403-35	TRANSISTOR UN5113	
Q499	8-729-403-35	TRANSISTOR UN5113	
Q500	8-729-117-32	TRANSISTOR 2SC4177	
Q501	8-729-140-63	TRANSISTOR 2SA1611	
Q502	8-729-140-63	TRANSISTOR 2SA1611	
Q503	8-729-117-32	TRANSISTOR 2SC4177	
Q504	8-729-140-63	TRANSISTOR 2SA1611	
Q505	8-729-117-32	TRANSISTOR 2SC4177	
Q506	8-729-402-42	TRANSISTOR UN5213	
Q507	8-729-140-63	TRANSISTOR 2SA1611	
Q509	8-729-117-32	TRANSISTOR 2SC4177	
Q510	8-729-117-32	TRANSISTOR 2SC4177	
Q513	8-729-403-35	TRANSISTOR UN5113	
Q514	8-729-905-45	TRANSISTOR DTA143EU	
Q601	8-729-216-22	TRANSISTOR 2SA1162	
Q602	8-729-140-63	TRANSISTOR 2SA1611	
Q604	8-729-117-32	TRANSISTOR 2SC4177	
Q606	8-729-117-32	TRANSISTOR 2SC4177	
Q608	8-729-403-07	TRANSISTOR XN1213	
Q609	8-729-901-01	TRANSISTOR DTC144EK	
Q610	8-729-403-07	TRANSISTOR XN1213	
Q612	8-729-901-01	TRANSISTOR DTC144EK	
Q613	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q614	8-729-403-35	TRANSISTOR UN5113	
Q615	8-729-905-45	TRANSISTOR DTA143EU	
Q616	8-729-140-63	TRANSISTOR 2SA1611	
Q617	8-729-117-32	TRANSISTOR 2SC4177	
Q618	8-729-117-32	TRANSISTOR 2SC4177	
Q630	8-729-901-01	TRANSISTOR DTC144EK	
Q631	8-729-271-22	TRANSISTOR 2SC2712-G	
Q632	8-729-271-22	TRANSISTOR 2SC2712-G	
Q633	8-729-901-06	TRANSISTOR DTA144EK	
Q634	8-729-403-07	TRANSISTOR XN1213	
Q636	8-729-403-06	TRANSISTOR XN1113	
Q638	8-729-901-06	TRANSISTOR DTA144EK	
Q639	8-729-901-01	TRANSISTOR DTC144EK	
Q640	8-729-901-06	TRANSISTOR DTA144EK	
Q642	8-729-901-01	TRANSISTOR DTC144EK	
Q645	8-729-117-32	TRANSISTOR 2SC4177	
Q646	8-729-903-10	TRANSISTOR FMW1	
Q647	8-729-216-22	TRANSISTOR 2SA1162	
Q649	8-729-117-32	TRANSISTOR 2SC4177	
Q650	8-729-271-22	TRANSISTOR 2SC2712-G	
Q651	8-729-901-06	TRANSISTOR DTA144EK	
Q652	8-729-271-22	TRANSISTOR 2SC2712-G	
Q654	8-729-117-32	TRANSISTOR 2SC4177	

RESISTOR

Ref.No	Part No.	Description				Remark
R052	1-216-810-11	METAL GLAZE	120	5%	1/16W	
R053	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R054	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R055	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R056	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R057	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R058	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R059	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R060	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R061	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R062	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R063	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R064	1-216-804-11	METAL GLAZE	39	5%	1/16W	
R065	1-216-801-11	METAL GLAZE	22	5%	1/16W	
R066	1-216-819-11	METAL GLAZE	680	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R067	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R068	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R069	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R070	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R071	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R072	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R073	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R074	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R077	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R101	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R103	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R108	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R110	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R113	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R114	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R115	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R116	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R122	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R123	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R124	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R125	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R126	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R127	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R129	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R221	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R251	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R252	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R253	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R258	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R259	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R260	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R261	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R262	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R263	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R264	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R265	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R266	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R267	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R268	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R269	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R270	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R271	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R272	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R273	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R274	1-216-808-11	METAL GLAZE	82	5%	1/16W	
R275	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R276	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R277	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R278	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R279	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R280	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R282	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R283	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R284	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R285	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R286	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R287	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R288	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R289	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R290	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R291	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R292	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R293	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R294	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R295	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R296	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R297	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R298	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R299	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R301	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R302	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R303	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R304	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R305	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R306	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R307	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R308	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R310	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R311	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R312	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R313	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R314	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R316	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R317	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R318	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R319	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R320	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R321	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R322	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R323	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R324	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R326	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R327	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R328	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R329	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R330	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R331	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R332	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R333	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R334	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R335	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R336	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R337	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R338	1-216-848-11	METAL GLAZE	180K	5%	1/16W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R343	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R357	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R358	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R359	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R360	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R361	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R362	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R363	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R364	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R365	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R366	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R367	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R368	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R369	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R370	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R371	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R372	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R373	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R374	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R375	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R376	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R377	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R378	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R379	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R380	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R381	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R382	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R386	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R388	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R390	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R391	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R392	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R393	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R394	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R395	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R396	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R397	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R398	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R400	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R401	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R402	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R403	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R404	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R405	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R406	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R407	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R408	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R409	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R410	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R411	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R412	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R413	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R414	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R415	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R416	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R417	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R418	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R419	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R420	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R421	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R422	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R423	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R424	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R425	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R426	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R427	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R428	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R429	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R430	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R431	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R432	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R433	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R434	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R435	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R436	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R437	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R438	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R439	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R440	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R441	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R442	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R444	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R445	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R446	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R447	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R448	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R449	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R450	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R451	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R452	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R453	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R454	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R455	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R456	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R457	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R458	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R459	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R460	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R461	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R462	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R463	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R464	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R465	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R466	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R468	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R469	1-216-851-11	METAL GLAZE	330K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R471	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R472	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R473	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R475	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R476	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R477	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R478	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R479	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R480	1-216-855-11	METAL GLAZE	680K	5%	1/16W	
R481	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R482	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R483	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R484	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R485	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R486	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R487	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R488	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R489	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R490	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R491	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R492	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R493	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R494	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R495	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R496	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R498	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R499	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R500	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R501	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R502	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R503	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R504	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R505	1-216-853-11	METAL GLAZE	470K	5%	1/16W	
R506	1-216-846-11	METAL GLAZE	120K	5%	1/16W	
R507	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R510	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R512	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R513	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R514	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R515	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R516	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R517	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R518	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R519	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R520	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R521	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R522	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R523	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R525	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R526	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R527	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R528	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R529	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R530	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R531	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R532	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R533	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R534	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R535	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R536	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R537	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R538	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R539	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R540	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R541	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R542	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R543	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R544	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R554	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R555	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R556	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R557	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R558	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R559	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R560	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R561	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R562	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R563	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R564	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R565	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R566	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R567	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R568	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R569	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R570	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R571	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R572	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R579	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R581	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R582	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R583	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R584	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R585	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R586	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R587	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R588	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R590	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R592	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R593	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R594	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R595	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R596	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R597	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R601	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R602	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R603	1-216-818-11	METAL GLAZE	560	5%	1/16W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R604	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R606	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R607	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R608	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R609	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R610	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R611	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R612	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R613	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R614	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R615	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R616	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R617	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R618	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R619	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R620	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R621	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R622	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R623	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R624	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R625	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R626	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R627	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R628	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R629	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R630	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R632	1-216-848-11	METAL GLAZE	180K	5%	1/16W	
R633	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R634	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R635	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R637	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R638	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R639	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R640	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R641	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R643	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R644	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R645	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R647	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R666	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R667	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R670	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R671	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R672	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R673	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R675	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R676	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R677	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R678	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R679	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R680	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R681	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R682	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R686	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R688	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R691	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R692	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R693	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R694	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R695	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R696	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R697	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R698	1-216-814-11	METAL GLAZE	270	5%	1/16W	
R699	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R700	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R701	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R702	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R705	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R706	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R707	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R708	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R709	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R710	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R711	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R712	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R713	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R714	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R715	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R716	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R717	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R744	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R745	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R746	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R747	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R748	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R749	1-216-815-11	METAL GLAZE	330	5%	1/16W	
R750	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R751	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R752	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R753	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R754	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R755	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R756	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R757	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R758	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R759	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R760	1-216-824-11	METAL GLAZE	1.8K	5%	1/16W	
R761	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R762	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R763	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R765	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R770	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R771	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R772	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R774	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R776	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R777	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R778	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R780	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R781	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R782	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R783	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R787	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R789	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R790	1-216-819-11	METAL GLAZE	680	5%	1/16W	
R791	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R795	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R796	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R797	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R798	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R799	1-216-837-11	METAL GLAZE	22K	5%	1/16W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV401	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV404	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K
RV405	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV406	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K
RV407	1-230-870-11	RES, ADJ, METAL GLAZE 10K
RV408	1-230-870-11	RES, ADJ, METAL GLAZE 10K
RV409	1-230-870-11	RES, ADJ, METAL GLAZE 10K
RV410	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K
RV416	1-230-870-11	RES, ADJ, METAL GLAZE 10K
RV417	1-230-874-11	RES, ADJ, METAL GLAZE 100K
RV601	1-230-871-11	RES, ADJ, METAL GLAZE 22K
RV602	1-230-871-11	RES, ADJ, METAL GLAZE 22K

TERMINAL PIN

Ref.No	Part No.	Description
TP401	*1-535-622-11	PIN, TERMINAL
TP402	*1-535-622-11	PIN, TERMINAL

BOARD

Ref.No	Part No.	Description
W403	1-629-777-11	FP-203 BOARD

CRYSTAL

Ref.No	Part No.	Description
X601	1-567-505-61	OSCILLATOR, CRYSTAL (3.58MHz)

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*A-7061-979-A PC-35 BOARD, COMPLETE (Ref.No 6,000 Series)
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Part No.	Description
*3-742-708-01	COVER, LPF SHIELD
*3-742-754-01	COVER (B), LPF SHIELD
*3-742-760-01	PLATE (A), SHIELD, LPF
*3-742-818-01	PLATE, SHIELD, PC

CAPACITOR

Ref.No	Part No.	Description			Remark
C301	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C302	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C304	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C311	1-124-967-11	ELECT	10MF	20%	10V
C312	1-126-100-11	ELECT	10MF	20%	6.3V
C313	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C314	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C315	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C316	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C317	1-126-094-11	ELECT	4.7MF	20%	16V
C318	1-126-094-11	ELECT	4.7MF	20%	16V
C319	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C320	1-124-566-11	ELECT	120MF	20%	6.3V
C321	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C322	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C323	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C325	1-163-235-91	CERAMIC CHIP	22PF	5%	50V
C326	1-163-235-91	CERAMIC CHIP	22PF	5%	50V
C327	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C328	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C329	1-124-225-00	ELECT	100MF	20%	6.3V
C330	1-126-157-11	ELECT	10MF	20%	6.3V
C331	1-126-153-11	ELECT	22MF	20%	6.3V
C332	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C333	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C334	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C335	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C336	1-126-157-11	ELECT	10MF	20%	6.3V
C337	1-124-464-11	ELECT	0.22MF	20%	50V
C338	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C339	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V
C341	1-126-153-11	ELECT	22MF	20%	6.3V
C342	1-124-257-00	ELECT	2.2MF	20%	35V
C343	1-124-225-00	ELECT	100MF	20%	6.3V
C345	1-126-157-11	ELECT	10MF	20%	6.3V
C346	1-126-153-11	ELECT	22MF	20%	6.3V
C347	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C348	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C349	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C350	1-124-225-00	ELECT	100MF	20%	6.3V
C351	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C352	1-126-157-11	ELECT	10MF	20%	6.3V
C353	1-124-464-11	ELECT	0.22MF	20%	50V
C354	1-124-257-00	ELECT	2.2MF	20%	35V
C355	1-124-225-00	ELECT	100MF	20%	6.3V
C356	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C357	1-126-153-11	ELECT	22MF	20%	6.3V
C358	1-126-153-11	ELECT	22MF	20%	6.3V
C359	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C360	1-124-257-00	ELECT	2.2MF	20%	35V
C361	1-124-257-00	ELECT	2.2MF	20%	35V
C362	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C363	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C364	1-126-153-11	ELECT	22MF	20%	6.3V
C365	1-126-478-11	ELECT	33MF	20%	10V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description			Remark
C366	1-126-478-11	ELECT	33MF	20%	10V
C367	1-126-153-11	ELECT	22MF	20%	6.3V
C368	1-126-157-11	ELECT	10MF	20%	6.3V
C369	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C370	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C371	1-126-094-11	ELECT	4.7MF	20%	16V
C372	1-126-094-11	ELECT	4.7MF	20%	16V
C373	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C374	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C375	1-124-967-11	ELECT	10MF	20%	10V
C376	1-124-967-11	ELECT	10MF	20%	10V
C377	1-126-094-11	ELECT	4.7MF	20%	16V
C378	1-126-162-11	ELECT	3.3MF	20%	25V
C379	1-124-229-00	ELECT	33MF	20%	10V
C380	1-124-229-00	ELECT	33MF	20%	10V
C381	1-126-157-11	ELECT	10MF	20%	16V
C382	1-126-157-11	ELECT	10MF	20%	16V
C383	1-126-094-11	ELECT	4.7MF	20%	16V
C384	1-126-094-11	ELECT	4.7MF	20%	16V
C385	1-126-153-11	ELECT	22MF	20%	6.3V
C386	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C387	1-124-584-00	ELECT	100MF	20%	10V
C388	1-124-229-00	ELECT	33MF	20%	10V
C389	1-124-584-00	ELECT	100MF	20%	10V
C390	1-126-153-11	ELECT	22MF	20%	6.3V
C391	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C392	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C393	1-126-153-11	ELECT	22MF	20%	6.3V
C394	1-126-157-11	ELECT	10MF	20%	10V
C395	1-126-157-11	ELECT	10MF	20%	10V
C396	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C397	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C398	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C399	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C400	1-126-157-11	ELECT	10MF	20%	10V
C401	1-126-157-11	ELECT	10MF	20%	10V
C402	1-126-094-11	ELECT	4.7MF	20%	16V
C403	1-124-254-00	ELECT	0.68MF	20%	50V
C404	1-126-094-11	ELECT	4.7MF	20%	16V
C405	1-124-254-00	ELECT	0.68MF	20%	50V
C406	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C407	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C408	1-164-330-21	CERAMIC CHIP	0.22MF	10%	16V
C409	1-163-009-11	CERAMIC CHIP	0.001MF		50V
C410	1-124-257-00	ELECT	2.2MF	20%	35V
C411	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C412	1-124-225-00	ELECT	100MF	20%	6.3V
C413	1-126-153-11	ELECT	22MF	20%	6.3V
C416	1-126-157-11	ELECT	10MF	20%	6.3V
C417	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C421	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C422	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C424	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C425	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C426	1-124-499-11	ELECT	1MF	20%	35V
C427	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C428	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C430	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C431	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C432	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C433	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C434	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C435	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C436	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C437	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C438	1-126-157-11	ELECT	10MF	20%	6.3V
C440	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C441	1-126-157-11	ELECT	10MF	20%	6.3V
C442	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C443	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C444	1-126-157-11	ELECT	10MF	20%	6.3V
C445	1-126-157-11	ELECT	10MF	20%	6.3V
C446	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C447	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C448	1-124-604-00	ELECT	330MF	20%	10V
C449	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C450	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C451	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C543	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C545	1-124-584-00	ELECT	100MF	20%	10V
C546	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C547	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C548	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V
C549	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C550	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C600	1-126-160-11	ELECT	1MF	20%	50V
C601	1-126-157-11	ELECT	10MF	20%	6.3V
C602	1-124-584-00	ELECT	100MF	20%	10V
C603	1-126-157-11	ELECT	10MF	20%	6.3V
C604	1-126-157-11	ELECT	10MF	20%	6.3V
C605	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C606	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C607	1-124-584-00	ELECT	100MF	20%	10V
C608	1-126-157-11	ELECT	10MF	20%	6.3V
C609	1-126-100-11	ELECT	10MF	20%	6.3V
C610	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C611	1-126-157-11	ELECT	10MF	20%	6.3V
C612	1-126-100-11	ELECT	10MF	20%	6.3V
C613	1-124-584-00	ELECT	100MF	20%	10V
C614	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C615	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C616	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C617	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C618	1-126-160-11	ELECT	1MF	20%	50V
C619	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C620	1-163-038-00	CERAMIC CHIP	0.1MF		25V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C621	1-124-566-11	ELECT	120MF	20%	6.3V
C622	1-126-160-11	ELECT	1MF	20%	50V
C623	1-124-270-61	ELECT	0.47MF	20%	50V
C624	1-124-270-61	ELECT	0.47MF	20%	50V
C625	1-126-157-11	ELECT	10MF	20%	6.3V
C626	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C627	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C628	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C629	1-126-153-11	ELECT	22MF	20%	6.3V
C630	1-124-967-11	ELECT	10MF	20%	10V
C631	1-126-100-11	ELECT	10MF	20%	6.3V
C632	1-126-100-11	ELECT	10MF	20%	6.3V
C635	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C636	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C637	1-126-100-11	ELECT	10MF	20%	6.3V
C638	1-126-157-11	ELECT	10MF	20%	6.3V
C639	1-126-157-11	ELECT	10MF	20%	6.3V
C640	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C641	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C642	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C643	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C644	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C645	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C646	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C647	1-124-967-11	ELECT	10MF	20%	10V
C648	1-124-967-11	ELECT	10MF	20%	10V
C649	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C650	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C651	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C652	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C655	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C656	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C668	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C670	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C672	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C674	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C675	1-126-529-11	ELECT	0.47MF	20%	50V
C676	1-126-529-11	ELECT	0.47MF	20%	50V
C677	1-124-604-00	ELECT	330MF	20%	10V
C678	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C679	1-124-566-11	ELECT	120MF	20%	6.3V
C680	1-124-566-11	ELECT	120MF	20%	6.3V
C681	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C682	1-126-157-11	ELECT	10MF	20%	10V
C683	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C684	1-124-967-11	ELECT	10MF	20%	10V
C685	1-124-967-11	ELECT	10MF	20%	10V
C686	1-124-225-00	ELECT	100MF	20%	6.3V
C687	1-124-225-00	ELECT	100MF	20%	6.3V
C689	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C690	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C691	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C692	1-163-038-00	CERAMIC CHIP	0.1MF		25V

Ref.No	Part No.	Description			Remark
C693	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C694	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C695	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C698	1-126-153-11	ELECT	22MF	20%	6.3V

CONNECTOR

Ref.No	Part No.	Description
CN301	*1-566-185-21	PIN, CONNECTOR (PC BOARD) 6P
CN302	*1-566-185-11	PIN, CONNECTOR (PC BOARD) 6P
CN303	*1-566-201-11	PIN, CONNECTOR (PC BOARD) 8P
CN305	*1-565-883-11	PIN, CONNECTOR (PC BOARD) 11P
CN306	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P
CN307	*1-565-211-11	CONNECTOR, FPC (ZIF) 22P
CN308	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P
CN309	*1-566-197-11	PIN, CONNECTOR (PC BOARD) 4P
CN310	*1-566-198-11	PIN, CONNECTOR (PC BOARD) 5P
CN311	*1-566-196-11	PIN, CONNECTOR (PC BOARD) 3P
CN312	*1-566-185-11	PIN, CONNECTOR (PC BOARD) 6P
CN313	1-565-880-11	PIN, CONNECTOR (PC BOARD) 8P
CN316	*1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P
CN317	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P

TRIMMER

Ref.No	Part No.	Description
CV422	1-141-311-11	CAP, VAR, TRIMMER (CHIP)

DIODE

Ref.No	Part No.	Description
D301	8-719-108-24	DIODE 1SS223
D315	8-719-108-24	DIODE 1SS223
D316	8-719-400-18	DIODE MA152WK
D317	8-719-400-18	DIODE MA152WK
D318	8-719-400-18	DIODE MA152WK
D319	8-719-400-18	DIODE MA152WK
D320	8-713-300-88	DIODE 1T33C-01
D322	8-719-108-24	DIODE 1SS223
D333	8-719-108-24	DIODE 1SS223
D334	8-719-108-24	DIODE 1SS223
D335	8-719-104-34	DIODE 1S2836
D336	8-719-108-24	DIODE 1SS223
D337	8-719-104-34	DIODE 1S2836
D338	8-719-104-34	DIODE 1S2836
D339	8-719-400-18	DIODE MA152WK
D341	8-719-108-24	DIODE 1SS223
D342	8-719-400-18	DIODE MA152WK
D353	8-719-108-24	DIODE 1SS223
D600	8-719-104-34	DIODE 1S2836
D601	8-719-108-24	DIODE 1SS223
D602	8-719-108-24	DIODE 1SS223
D603	8-719-104-34	DIODE 1S2836
D604	8-719-104-34	DIODE 1S2836
D605	8-719-108-24	DIODE 1SS223
D606	8-719-104-34	DIODE 1S2836
D607	8-719-104-34	DIODE 1S2836
D608	8-719-104-34	DIODE 1S2836
D610	8-719-108-24	DIODE 1SS223

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
D611	8-719-104-34	DIODE 1S2836	
D612	8-719-108-24	DIODE 1SS223	
D613	8-719-108-24	DIODE 1SS223	
D614	8-719-800-76	DIODE 1SS226	
D615	8-719-800-76	DIODE 1SS226	
D616	8-719-108-24	DIODE 1SS223	
D617	8-719-108-24	DIODE 1SS223	
D618	8-719-800-76	DIODE 1SS226	
D619	8-719-108-24	DIODE 1SS223	
D620	8-719-940-45	DIODE DWA010	
D621	8-719-108-24	DIODE 1SS223	
D622	8-719-800-76	DIODE 1SS226	
D623	8-719-108-24	DIODE 1SS223	
D624	8-719-400-18	DIODE MA152WK	
D625	8-719-800-76	DIODE 1SS226	
D626	8-719-800-76	DIODE 1SS226	

FILTER

Ref.No	Part No.	Description	Remark
FL301	1-236-109-11	FILTER, LOW PASS	
FL302	1-236-109-11	FILTER, LOW PASS	
FL303	1-236-043-11	FILTER, LOW PASS	
FL304	1-236-043-11	FILTER, LOW PASS	

IC

Ref.No	Part No.	Description	Remark
IC301	8-759-111-56	IC UPC4572G2	
IC302	8-759-145-75	IC UPC1313HA	
IC303	8-759-603-27	IC M5201FP	
IC304	8-759-603-27	IC M5201FP	
IC305	8-759-009-07	IC MC14053BF	
IC306	8-759-111-56	IC UPC4572G2	
IC307	8-759-633-01	IC M5222FP	
IC308	8-759-603-27	IC M5201FP	
IC309	8-759-603-27	IC M5201FP	
IC310	8-759-603-27	IC M5201FP	
IC311	8-759-603-27	IC M5201FP	
IC312	8-759-111-56	IC UPC4572G2	
IC313	8-752-009-90	IC CX20099	
IC314	8-752-332-57	IC CXD1077M	
IC315	8-759-929-26	IC TL431CPS	
IC316	8-759-111-56	IC UPC4572G2	
IC317	8-752-017-60	IC CX20176	
IC318	8-759-981-82	IC RC3414M	
IC319	8-757-991-00	IC CX-7991	
IC320	8-759-979-96	IC MB8464A-15LLPF	
IC321	8-752-332-46	IC CXD1208Q	
IC322	8-759-990-94	IC MB606199	
IC323	8-759-111-56	IC UPC4572G2	
IC324	8-752-010-20	IC CX20102	
IC325	8-759-961-38	IC BA6138	
IC327	8-759-981-69	IC LM2904M	
IC328	8-759-009-51	IC MC14538BF	
IC329	8-759-009-07	IC MC14053BF	
IC330	8-759-981-69	IC LM2904M	

Ref.No	Part No.	Description	Remark
IC331	8-759-981-69	IC LM2904M	
IC332	8-759-603-27	IC M5201FP	
IC333	8-759-603-27	IC M5201FP	

COIL

Ref.No	Part No.	Description	Remark
L301	1-408-978-21	INDUCTOR 47UH	
L302	1-408-978-21	INDUCTOR 47UH	
L303	1-408-978-21	INDUCTOR 47UH	
L305	1-410-144-11	INDUCTOR 15UH	
L306	1-408-978-21	INDUCTOR 47UH	
L307	1-410-389-31	INDUCTOR CHIP 47UH	
L308	1-410-658-31	INDUCTOR CHIP 220UH	
L309	1-408-978-21	INDUCTOR 47UH	
L310	1-408-978-21	INDUCTOR 47UH	
L311	1-408-970-21	INDUCTOR 10UH	
L315	1-408-970-21	INDUCTOR 10UH	
L600	1-410-144-11	INDUCTOR 15UH	
L601	1-408-982-11	INDUCTOR 100UH	
L602	1-408-970-21	INDUCTOR 10UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q307	8-729-902-93	TRANSISTOR FMG4	
Q310	8-729-100-66	TRANSISTOR 2SC1623	
Q311	8-729-100-66	TRANSISTOR 2SC1623	
Q312	8-729-901-01	TRANSISTOR DTC144EK	
Q313	8-729-901-06	TRANSISTOR DTA144EK	
Q314	8-729-216-22	TRANSISTOR 2SA1162	
Q316	8-729-901-06	TRANSISTOR DTA144EK	
Q319	8-729-901-06	TRANSISTOR DTA144EK	
Q323	8-729-901-06	TRANSISTOR DTA144EK	
Q324	8-729-100-66	TRANSISTOR 2SC1623	
Q325	8-729-100-66	TRANSISTOR 2SC1623	
Q326	8-729-100-66	TRANSISTOR 2SC1623	
Q327	8-729-100-66	TRANSISTOR 2SC1623	
Q330	8-729-901-01	TRANSISTOR DTC144EK	
Q331	8-729-901-06	TRANSISTOR DTA144EK	
Q332	8-729-900-53	TRANSISTOR DTC114EK	
Q333	8-729-901-01	TRANSISTOR DTC144EK	
Q334	8-729-100-66	TRANSISTOR 2SC1623	
Q335	8-729-216-22	TRANSISTOR 2SA1162	
Q336	8-729-901-01	TRANSISTOR DTC144EK	
Q337	8-729-100-66	TRANSISTOR 2SC1623	
Q338	8-729-100-66	TRANSISTOR 2SC1623	
Q339	8-729-100-66	TRANSISTOR 2SC1623	
Q340	8-729-100-66	TRANSISTOR 2SC1623	
Q341	8-729-100-66	TRANSISTOR 2SC1623	
Q342	8-729-100-66	TRANSISTOR 2SC1623	
Q345	8-729-902-90	TRANSISTOR FMA4	
Q347	8-729-901-06	TRANSISTOR DTA144EK	
Q348	8-729-901-01	TRANSISTOR DTC144EK	
Q349	8-729-904-20	TRANSISTOR FMA2	
Q350	8-729-901-06	TRANSISTOR DTA144EK	
Q351	8-729-901-01	TRANSISTOR DTC144EK	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q352	8-729-901-01	TRANSISTOR DTC144EK	
Q600	8-729-901-01	TRANSISTOR DTC144EK	
Q601	8-729-904-09	TRANSISTOR FMG2	
Q602	8-729-904-09	TRANSISTOR FMG2	
Q603	8-729-904-09	TRANSISTOR FMG2	
Q604	8-729-901-03	TRANSISTOR DTC144WK	
Q605	8-729-901-01	TRANSISTOR DTC144EK	
Q606	8-729-100-66	TRANSISTOR 2SC1623	
Q607	8-729-100-66	TRANSISTOR 2SC1623	
Q610	8-729-902-99	TRANSISTOR DTC114TK	
Q611	8-729-902-99	TRANSISTOR DTC114TK	
Q612	8-729-100-66	TRANSISTOR 2SC1623	
Q613	8-729-901-06	TRANSISTOR DTA144EK	
Q614	8-729-901-06	TRANSISTOR DTA144EK	
Q615	8-729-100-66	TRANSISTOR 2SC1623	
Q616	8-729-900-99	TRANSISTOR DTA144WK	
Q617	8-729-900-99	TRANSISTOR DTA144WK	
Q618	8-729-100-66	TRANSISTOR 2SC1623	
Q619	8-729-901-01	TRANSISTOR DTC144EK	
Q620	8-729-901-01	TRANSISTOR DTC144EK	
Q623	8-729-901-01	TRANSISTOR DTC144EK	
Q624	8-729-900-51	TRANSISTOR DTA114TK	

RESISTOR

Ref.No	Part No.	Description				Remark
R301	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R302	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R303	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R304	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R305	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R306	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R307	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R308	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R309	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R310	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R311	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R312	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R313	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R314	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R315	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R316	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R318	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R319	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R322	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R323	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R324	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R325	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R326	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R327	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R328	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R329	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R330	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R333	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R334	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R336	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R337	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R338	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R339	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R340	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R342	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R344	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R345	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R346	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R347	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R353	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R359	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R360	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R361	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R362	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R363	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R364	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R365	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R366	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R367	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R368	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R369	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R370	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R371	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R372	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R373	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R374	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R375	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R376	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R377	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R378	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R385	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R386	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R387	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R388	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R389	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R390	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R391	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R393	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R394	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R395	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R396	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R397	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R398	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R399	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R400	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R401	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R402	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R403	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R404	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R405	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R406	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R407	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R408	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R409	1-216-700-11	METAL GLAZE	470K	1%	1/10W	
R410	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R411	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R412	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W	
R413	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R414	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	
R415	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R418	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R419	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R420	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R421	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R422	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R423	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R424	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R425	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R426	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R427	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R428	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R429	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R430	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R431	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R432	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R433	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R434	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R435	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R436	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R437	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R438	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R439	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R440	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R441	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R442	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R443	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R444	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R445	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R446	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R447	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R448	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R449	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R450	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R451	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R452	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R453	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R454	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R455	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R456	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R457	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R458	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R459	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R460	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R461	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R462	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R463	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R464	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R465	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R466	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R467	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R468	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R469	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R470	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R471	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R472	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R473	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R474	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R475	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R476	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R477	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R478	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R479	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R482	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R483	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R485	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R486	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R489	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R490	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R493	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R494	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R499	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R504	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R505	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R506	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R507	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R508	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R509	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R510	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R511	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R512	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R513	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R514	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R515	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R516	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R517	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R518	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R519	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R520	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R522	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R523	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R524	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R525	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R526	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R528	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R534	1-216-645-11	METAL CHIP	560	0.50%	1/10W	
R536	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R537	1-216-091-00	METAL GLAZE	56K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R538	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R539	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R540	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R541	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R546	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R547	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R550	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R551	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R552	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R553	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R555	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R556	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R557	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R562	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R566	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R567	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R569	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R570	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R572	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R573	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R574	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R575	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R576	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R577	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R578	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R579	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R580	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R581	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R583	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R584	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R585	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R586	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R587	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R590	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R592	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R593	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R594	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R595	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R598	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R600	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R601	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R602	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R603	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R604	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R605	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R606	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R607	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R608	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R609	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R610	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R611	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R612	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R613	1-216-109-00	METAL GLAZE	330K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R614	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R615	1-216-127-11	METAL GLAZE	1.8M	5%	1/10W	
R616	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R617	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R618	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R619	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R620	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R621	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R622	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R623	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R624	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R625	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R626	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R627	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R628	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R629	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R630	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R631	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R632	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R633	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R634	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R635	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R636	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R637	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R638	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R639	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R640	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R641	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R642	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R643	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R644	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R645	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R646	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R647	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R648	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R649	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R650	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R652	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R653	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R654	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R655	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R656	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R657	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R659	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R660	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R661	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R662	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R663	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R666	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R668	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R669	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R670	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R671	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R672	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R674	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R675	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R677	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R679	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R680	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R681	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R682	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R684	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R685	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R686	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R688	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R689	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R690	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R691	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R692	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R693	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R694	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R695	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R698	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R699	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R700	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R701	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R704	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R705	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R708	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R710	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R711	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R713	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R714	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R715	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R716	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R717	1-216-295-00	METAL GLAZE	0	5%	1/10W	

VARIABLE RESISTOR

RV301	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K
RV302	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K
RV303	1-230-876-11	RES, ADJ, METAL GLAZE	470K
RV304	1-238-223-11	RES, ADJ, METAL GLAZE	10K
RV305	1-238-223-11	RES, ADJ, METAL GLAZE	10K
RV306	1-230-868-11	RES, ADJ, METAL GLAZE	2.2K
RV307	1-238-219-11	RES, ADJ, METAL GRAZE	470
RV309	1-230-871-11	RES, ADJ, METAL GLAZE	22K
RV310	1-230-871-11	RES, ADJ, METAL GLAZE	22K

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Ref.No	Part No.	Description	Remark
	*A-7061-980-A	AS-22 BOARD, COMPLETE (Ref.No 9,000 Series) **********************	

CAPACITOR

C231	1-126-160-11	ELECT	1MF	20%	50V
C232	1-124-584-00	ELECT	100MF	20%	10V
C233	1-124-584-00	ELECT	100MF	20%	10V
C234	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C235	1-126-160-11	ELECT	1MF	20%	50V
C236	1-164-161-11	CERAMIC CHIP	0.0022MF		50V
C237	1-126-162-11	ELECT	3.3MF	20%	25V
C238	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C239	1-124-584-00	ELECT	100MF	20%	10V
C240	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C241	1-124-584-00	ELECT	100MF	20%	10V
C245	1-126-157-11	ELECT	10MF	20%	10V
C246	1-124-584-00	ELECT	100MF	20%	10V
C611	1-126-162-11	ELECT	3.3MF	20%	35V
C612	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C613	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C614	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C615	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C616	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C617	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C618	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C619	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C620	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C621	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C622	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C623	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C624	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C625	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C630	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C633	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C634	1-124-239-00	ELECT	6.8MF	20%	10V
C635	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C636	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C637	1-126-154-11	ELECT	47MF	20%	6.3V
C638	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C639	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C640	1-126-154-11	ELECT	47MF	20%	6.3V
C641	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C642	1-126-153-11	ELECT	22MF	20%	6.3V
C643	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C644	1-124-967-11	ELECT	10MF	20%	10V
C645	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C646	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C647	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C648	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C649	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C650	1-126-157-11	ELECT	10MF	20%	10V
C651	1-126-157-11	ELECT	10MF	20%	10V
C652	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C653	1-124-967-11	ELECT	10MF	20%	10V
C654	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C655	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C656	1-126-160-11	ELECT	1MF	20%	50V
C657	1-126-160-11	ELECT	1MF	20%	50V
C658	1-126-160-11	ELECT	1MF	20%	50V
C659	1-126-160-11	ELECT	1MF	20%	50V
C660	1-126-160-11	ELECT	1MF	20%	50V
C661	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C662	1-163-143-00	CERAMIC CHIP	0.0012MF	5%	50V
C663	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C664	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C665	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C666	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C668	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C669	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C670	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C671	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C701	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C702	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C703	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C704	1-124-465-00	ELECT	0.47MF	20%	50V
C705	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C706	1-163-016-00	CERAMIC CHIP	0.0039MF	10%	50V
C707	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C708	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C710	1-124-584-00	ELECT	100MF	20%	10V
C711	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C712	1-124-257-00	ELECT	2.2MF	20%	50V
C713	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C714	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C715	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C716	1-124-229-00	ELECT	33MF	20%	6.3V
C717	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C718	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C719	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C720	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C721	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V
C722	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C723	1-126-160-11	ELECT	1MF	20%	50V
C724	1-126-157-11	ELECT	10MF	20%	6..3V
C725	1-126-157-11	ELECT	10MF	20%	6.3V
C726	1-126-153-11	ELECT	22MF	20%	6.3V
C727	1-124-239-00	ELECT	6.8MF	20%	10V
C729	1-126-094-11	ELECT	4.7MF	20%	35V
C730	1-126-153-11	ELECT	22MF	20%	6.3V
C731	1-124-225-00	ELECT	100MF	20%	6.3V
C732	1-124-257-00	ELECT	2.2MF	20%	50V
C733	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C734	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C735	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C736	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C737	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C738	1-124-225-00	ELECT	100MF	20%	6.3V
C739	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C740	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C741	1-126-154-11	ELECT	47MF	20%	6.3V
C742	1-124-239-00	ELECT	6.8MF	20%	10V
C743	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C744	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C745	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C746	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C747	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C748	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C749	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C750	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C751	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C752	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C753	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C754	1-124-465-00	ELECT	0.47MF	20%	50V
C755	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C756	1-163-016-00	CERAMIC CHIP	0.0039MF	10%	50V
C757	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C758	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C760	1-124-584-00	ELECT	100MF	20%	10V
C761	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C762	1-124-257-00	ELECT	2.2MF	20%	50V
C763	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C764	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C765	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C766	1-124-229-00	ELECT	33MF	20%	6.3V
C767	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C768	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C769	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C770	1-162-587-11	CERAMIC CHIP	0.039MF	10%	25V
C771	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V
C772	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C773	1-126-160-11	ELECT	1MF	20%	50V
C774	1-126-157-11	ELECT	10MF	20%	6.3V
C775	1-126-157-11	ELECT	10MF	20%	6.3V
C776	1-126-153-11	ELECT	22MF	20%	6.3V
C777	1-124-239-00	ELECT	6.8MF	20%	10V
C779	1-126-094-11	ELECT	4.7MF	20%	35V
C780	1-126-153-11	ELECT	22MF	20%	6.3V
C781	1-124-225-00	ELECT	100MF	20%	6.3V
C782	1-124-257-00	ELECT	2.2MF	20%	50V
C783	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V
C784	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C785	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C786	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C787	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C788	1-124-225-00	ELECT	100MF	20%	6.3V
C789	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V
C790	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C791	1-126-154-11	ELECT	47MF	20%	6.3V
C792	1-124-239-00	ELECT	6.8MF	20%	10V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
C793	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C794	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C795	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C796	1-126-162-11	ELECT 3.3MF 20% 35V	
C797	1-163-038-00	CERAMIC CHIP 0.1MF 25V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN231	1-565-880-11	PIN, CONNECTOR (PC BOARD) 8P	
CN232	1-565-527-11	PIN, CONNECTOR (PC BOARD) 2P	
CN701	*1-566-182-11	PIN, CONNECTOR (PC BOARD) 3P	
CN702	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P	
CN703	*1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P	

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-400-18	DIODE MA152WK	

FILTER

Ref.No	Part No.	Description	Remark
FL701	1-236-550-11	BPF (1.5MHz)	
FL702	1-236-551-11	BPF (1.7MHz)	

IC

Ref.No	Part No.	Description	Remark
IC231	8-759-603-27	IC M5201FP	
IC232	8-759-701-02	IC NJM2073M	
IC701	8-752-033-01	IC CXA1237AR	
IC702	8-752-033-01	IC CXA1237AR	
IC703	8-759-100-94	IC UPC358G2	
IC704	8-759-932-54	IC MC14066BF	
IC705	8-759-100-94	IC UPC358G2	
IC706	8-759-100-94	IC UPC358G2	
IC707	8-759-932-54	IC MC14066BF	
IC708	8-752-334-42	IC CXD2106Q	

COIL

Ref.No	Part No.	Description	Remark
L231	1-410-138-11	INDUCTOR 4.7UH	
L701	1-410-836-41	INDUCTOR 220UH	
L702	1-410-836-41	INDUCTOR 220UH	
L703	1-408-970-21	INDUCTOR 10UH	
L705	1-410-828-41	INDUCTOR 47UH	
L706	1-410-828-41	INDUCTOR 47UH	
L707	1-410-828-41	INDUCTOR 47UH	
L708	1-410-384-31	INDUCTOR CHIP 18UH	
L709	1-410-828-41	INDUCTOR 47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q231	8-729-805-25	TRANSISTOR 2SB1121	
Q232	8-729-901-01	TRANSISTOR DTC144EK	
Q233	8-729-901-01	TRANSISTOR DTC144EK	
Q234	8-729-902-99	TRANSISTOR DTC114TK	
Q235	8-729-902-93	TRANSISTOR FMG4	
Q701	8-729-100-66	TRANSISTOR 2SC1623	
Q702	8-729-220-93	TRANSISTOR 2SK209G	
Q703	8-729-901-01	TRANSISTOR DTC144EK	
Q704	8-729-220-93	TRANSISTOR 2SK209G	
Q705	8-729-900-51	TRANSISTOR DTA114TK	
Q706	8-729-901-01	TRANSISTOR DTC144EK	
Q707	8-729-901-06	TRANSISTOR DTA144EK	
Q708	8-729-900-51	TRANSISTOR DTA114TK	
Q709	8-729-901-01	TRANSISTOR DTC144EK	
Q710	8-729-901-06	TRANSISTOR DTA144EK	
Q711	8-729-901-01	TRANSISTOR DTC144EK	
Q712	8-729-901-01	TRANSISTOR DTC144EK	
Q713	8-729-100-66	TRANSISTOR 2SC1623	
Q714	8-729-100-66	TRANSISTOR 2SC1623	
Q715	8-729-901-01	TRANSISTOR DTC144EK	
Q716	8-729-100-66	TRANSISTOR 2SC1623	
Q717	8-729-100-66	TRANSISTOR 2SC1623	
Q718	8-729-100-66	TRANSISTOR 2SC1623	
Q719	8-729-100-66	TRANSISTOR 2SC1623	
Q720	8-729-100-66	TRANSISTOR 2SC1623	
Q721	8-729-216-22	TRANSISTOR 2SA1162	
Q723	8-729-100-66	TRANSISTOR 2SC1623	
Q724	8-729-100-66	TRANSISTOR 2SC1623	
Q725	8-729-903-10	TRANSISTOR FMW1	
Q726	8-729-100-66	TRANSISTOR 2SC1623	
Q727	8-729-216-22	TRANSISTOR 2SA1162	
Q728	8-729-901-06	TRANSISTOR DTA144EK	
Q729	8-729-903-97	TRANSISTOR FMS1FE	
Q730	8-729-903-10	TRANSISTOR FMW1	
Q732	8-729-100-66	TRANSISTOR 2SC1623	
Q733	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref.No	Part No.	Description	Remark
R231	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R232	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R233	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R234	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R235	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R236	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R237	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R238	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R239	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R240	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R242	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R243	1-216-134-00	METAL GLAZE 2.2 5% 1/8W	
R245	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R246	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R598	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R599	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R605	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R606	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R607	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R608	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R609	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R611	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R612	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R613	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R614	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R615	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R616	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R617	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R618	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R620	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R621	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R622	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R624	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R625	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R626	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R627	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R628	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R630	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R631	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R632	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R633	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R634	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R635	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R636	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R637	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R638	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R639	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R640	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R641	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R642	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R643	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R644	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R645	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R646	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R647	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R648	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R649	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R650	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R652	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R653	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R654	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R655	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R656	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R657	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R658	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R659	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R660	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R661	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R662	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R663	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R664	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R665	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R666	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R667	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R668	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R670	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R672	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R673	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R674	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R675	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R676	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R678	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R679	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R680	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R681	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R682	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R685	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R686	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R687	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R688	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R689	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R690	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R691	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R692	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R693	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R694	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R695	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R696	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R697	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R698	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R699	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R700	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R701	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R702	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R703	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R704	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R705	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R706	1-216-649-11	METAL GLAZE	820	1%	1/10W	
R707	1-216-649-11	METAL GLAZE	820	1%	1/10W	
R708	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R709	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R710	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R711	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R712	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R713	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R714	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R715	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R716	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R717	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R719	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R720	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R721	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R722	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R723	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R724	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R725	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R726	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R727	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R728	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R729	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R730	1-216-081-00	METAL GLAZE	22K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R731	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R732	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R733	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R734	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R735	1-216-081-00	METAL GLAZE 22K 5% 1/1CW	
R736	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R737	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R738	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R739	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R740	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R741	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R742	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R743	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R744	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R745	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R746	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R747	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R748	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R749	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R750	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R751	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R752	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R753	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R754	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R755	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R756	1-216-647-11	METAL GLAZE 680 1% 1/10W	
R757	1-216-647-11	METAL GLAZE 680 1% 1/10W	
R758	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R759	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R760	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R761	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R762	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R763	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R764	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R765	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R766	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R767	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R769	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R770	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R771	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R772	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R773	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R774	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R775	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R776	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R777	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R778	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R779	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R780	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R781	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R782	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R783	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R784	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R785	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R786	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R787	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R788	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R789	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R790	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R791	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R792	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R793	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R794	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R795	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R796	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R797	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R798	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R799	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	

VARIABLE RESISTOR

RV701	1-238-223-11	RES, ADJ, METAL GLAZE 10K	
RV702	1-230-871-11	RES, ADJ, METAL GLAZE 22K	
RV703	1-238-223-11	RES, ADJ, METAL GLAZE 10K	
RV704	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV706	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV707	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV710	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV712	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV713	1-238-222-11	RES, ADJ, METAL GLAZE 4.7K	
RV714	1-230-867-11	RES, ADJ, METAL GLAZE 1K	

CRYSTAL

X701	1-567-262-11	VIBRATOR, CRYSTAL	

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*A-7061-981-A MR-19 BOARD, COMPLETE (Ref.No 3,000 Series)
****
A-7068-142-A HR-3 (HIC) BOARD, COMPLETE

CAPACITOR

C813	1-162-940-11	CERAMIC CHIP 9PF 0.5PF 50V	
C814	1-162-940-11	CERAMIC CHIP 9PF 0.5PF 50V	
C816	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C817	1-162-952-11	CERAMIC CHIP 82PF 5% 50V	
C818	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C819	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C820	1-162-953-11	CERAMIC CHIP 100PF 5% 50V	
C821	1-135-155-21	TANTAL. CHIP 4.7MF 20% 16V	
C822	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C823	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C824	1-162-947-11	CERAMIC CHIP 33PF 5% 50V	
C825	1-162-965-11	CERAMIC CHIP 0.0015MF 10% 50V	
C827	1-162-958-11	CERAMIC CHIP 270PF 5% 50V	
C828	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C829	1-162-949-11	CERAMIC CHIP 47PF 5% 50V	
C830	1-162-948-11	CERAMIC CHIP 39PF 5% 50V	
C831	1-162-952-11	CERAMIC CHIP 82PF 5% 50V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C832	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C833	1-126-601-11	ELECT CHIP 2.2MF	20%	50V
C834	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C835	1-162-948-11	CERAMIC CHIP 39PF	5%	50V
C837	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C838	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C839	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C840	1-162-941-11	CERAMIC CHIP 10PF	0.5PF	50V
C841	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C842	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C845	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C846	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C847	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C848	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C849	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C850	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C851	1-162-942-11	CERAMIC CHIP 12PF	5%	50V
C852	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C853	1-162-938-11	CERAMIC CHIP 7PF	0.5PF	50V
C854	1-162-944-11	CERAMIC CHIP 18PF	5%	50V
C855	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C856	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C857	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C858	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C859	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C860	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C861	1-162-937-11	CERAMIC CHIP 6PF	0.5PF	50V
C862	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C863	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C864	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C865	1-126-603-11	ELECT CHIP 4.7MF	20%	35V
C866	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C870	1-162-955-11	CERAMIC CHIP 150PF	5%	50V
C872	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C873	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C876	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C881	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C882	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C883	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C884	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C886	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C887	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C890	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C891	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C892	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C893	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C894	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C897	1-164-227-11	CERAMIC CHIP 0.022MF	10%	25V
C901	1-162-958-11	CERAMIC CHIP 270PF	5%	50V
C902	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C904	1-162-930-11	CERAMIC CHIP 1PF	0.25PF	50V
C905	1-162-939-11	CERAMIC CHIP 8PF	0.5PF	50V
C906	1-162-954-11	CERAMIC CHIP 120PF	5%	50V

Ref.No	Part No.	Description		Remark
C951	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C952	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C953	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C954	1-162-957-11	CERAMIC CHIP 220PF	5%	50V
C955	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C956	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C957	1-162-945-11	CERAMIC CHIP 22PF	5%	50V
C958	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C959	1-135-180-21	TANTAL. CHIP 3.3MF	20%	4V
C960	1-162-946-11	CERAMIC CHIP 27PF	5%	50V
C961	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C962	1-135-180-21	TANTAL. CHIP 3.3MF	20%	4V

CONNECTOR

CN801	1-566-516-11	CONNECTOR, FPC (ZIF) 16P		
CN802	1-506-485-11	PIN, CONNECTOR 6P		
CN803	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P		
CN804	*1-566-766-11	PIN, CONNECTOR (PC BOARD) 11P		
CN805	*1-565-547-11	PIN, CONNECTOR (PC BOARD) 8P		

DIODE

D801	8-719-123-85	DIODE 1SS304		
D802	8-719-123-85	DIODE 1SS304		
D804	8-719-800-76	DIODE 1SS226		
D805	8-719-123-85	DIODE 1SS304		
D806	8-719-123-85	DIODE 1SS304		
D808	8-719-123-85	DIODE 1SS304		
D809	8-719-123-85	DIODE 1SS304		
D810	8-719-123-85	DIODE 1SS304		
D811	8-719-800-76	DIODE 1SS226		
D951	8-719-800-76	DIODE 1SS226		

IC

IC801	8-759-209-17	IC TA8607F		
IC802	8-759-925-60	IC BA401		

COIL

L804	1-410-384-31	INDUCTOR CHIP 18UH		
L805	1-410-384-31	INDUCTOR CHIP 18UH		
L806	1-410-381-11	INDUCTOR CHIP 10UH		
L807	1-410-381-11	INDUCTOR CHIP 10UH		
L808	1-408-795-21	INDUCTOR CHIP 330UH		
L809	1-410-167-41	INDUCTOR CHIP 820UH		
L810	1-410-657-21	INDUCTOR CHIP 180UH		
L811	1-410-379-21	INDUCTOR CHIP 6.8UH		
L812	1-410-374-11	INDUCTOR CHIP 2.7UH		
L813	1-410-379-21	INDUCTOR CHIP 6.8UH		
L814	1-410-379-21	INDUCTOR CHIP 6.8UH		
L815	1-410-384-31	INDUCTOR CHIP 18UH		
L816	1-408-797-11	INDUCTOR CHIP 470UH		
L817	1-408-797-11	INDUCTOR CHIP 470UH		
L818	1-410-384-31	INDUCTOR CHIP 18UH		

When indicating parts by reference number, please include the board name.

MR-19

Ref.No	Part No.	Description	Remark
L819	1-408-793-21	INDUCTOR CHIP 220UH	
L821	1-410-381-11	INDUCTOR CHIP 10UH	
L822	1-410-383-31	INDUCTOR CHIP 15UH	
L901	1-410-387-11	INDUCTOR CHIP 33UH	
L951	1-410-381-11	INDUCTOR CHIP 10UH	
L952	1-410-387-11	INDUCTOR CHIP 33UH	
L953	1-410-381-11	INDUCTOR CHIP 10UH	
L954	1-410-381-11	INDUCTOR CHIP 10UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q808	8-729-216-22	TRANSISTOR 2SA1162	
Q809	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q810	8-729-216-22	TRANSISTOR 2SA1162	
Q811	8-729-117-32	TRANSISTOR 2SC4177	
Q812	8-729-117-32	TRANSISTOR 2SC4177	
Q813	8-729-403-07	TRANSISTOR XN1213	
Q814	8-729-905-45	TRANSISTOR DTA143EU	
Q815	8-729-403-35	TRANSISTOR UN5113	
Q816	8-729-402-42	TRANSISTOR UN5213	
Q817	8-729-117-32	TRANSISTOR 2SC4177	
Q819	8-729-117-32	TRANSISTOR 2SC4177	
Q820	8-729-421-23	TRANSISTOR XN1501	
Q821	8-729-117-32	TRANSISTOR 2SC4177	
Q822	8-729-117-32	TRANSISTOR 2SC4177	
Q823	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q824	8-729-402-42	TRANSISTOR UN5213	
Q825	8-729-403-07	TRANSISTOR XN1213	
Q826	8-729-403-35	TRANSISTOR UN5113	
Q827	8-729-402-42	TRANSISTOR UN5213	
Q828	8-729-402-42	TRANSISTOR UN5213	
Q831	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q832	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q833	8-729-202-38	TRANSISTOR 2SC3326N	
Q834	8-729-117-32	TRANSISTOR 2SC4177	
Q835	8-729-216-22	TRANSISTOR 2SA1162	
Q836	8-729-100-66	TRANSISTOR 2SC1623	
Q837	8-729-117-32	TRANSISTOR 2SC4177	
Q838	8-729-117-32	TRANSISTOR 2SC4177	
Q842	8-729-117-32	TRANSISTOR 2SC4177	
Q901	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q902	8-729-402-42	TRANSISTOR UN5213	
Q951	8-729-402-81	TRANSISTOR XN4501	
Q952	8-729-117-32	TRANSISTOR 2SC4177	
Q953	8-729-140-63	TRANSISTOR 2SA1611-M5M6	
Q954	8-729-117-32	TRANSISTOR 2SC4177	
Q955	8-729-403-42	TRANSISTOR XN1401	
Q956	8-729-117-32	TRANSISTOR 2SC4177	
Q957	8-729-140-63	TRANSISTOR 2SA1611-M5M6	
Q958	8-729-117-32	TRANSISTOR 2SC4177	
Q959	8-729-402-42	TRANSISTOR UN5213	

RESISTOR

Ref.No	Part No.	Description	Remark
R817	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R818	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R819	1-216-805-11	METAL GLAZE 47 5% 1/16W	
R820	1-216-805-11	METAL GLAZE 47 5% 1/16W	
R821	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R822	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R823	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R824	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R825	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R826	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R827	1-216-811-11	METAL GLAZE 150 5% 1/16W	
R828	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R829	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R830	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R831	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R832	1-216-824-11	METAL GLAZE 1.8K 5% 1/16W	
R834	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R835	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R836	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R837	1-216-815-11	METAL GLAZE 330 5% 1/16W	
R838	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R839	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R840	1-216-815-11	METAL GLAZE 330 5% 1/16W	
R841	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R842	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R843	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R844	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R845	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R846	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R847	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R848	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R849	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R850	1-216-811-11	METAL GLAZE 150 5% 1/16W	
R852	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R853	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R854	1-216-834-11	METAL GLAZE 12K 5% 1/16W	
R855	1-216-815-11	METAL GLAZE 330 5% 1/16W	
R856	1-216-820-11	METAL GLAZE 820 5% 1/16W	
R857	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R858	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R859	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R861	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R862	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R865	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R866	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R867	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R868	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R869	1-216-824-11	METAL GLAZE 1.8K 5% 1/16W	
R870	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R872	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R873	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R874	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R875	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R876	1-216-841-11	METAL GLAZE 47K 5% 1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R877	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R878	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R885	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R886	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R887	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R888	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R889	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R890	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R891	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R894	1-216-812-11	METAL GLAZE	180	5%	1/16W	
R895	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R896	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R901	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R902	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R903	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R904	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R905	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R906	1-216-828-11	METAL GLAZE	3.9K	5%	1/16W	
R907	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R908	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R909	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R910	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R911	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R912	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R913	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R914	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R916	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R917	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R929	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R930	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R931	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R943	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R944	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R946	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R947	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R949	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R951	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R952	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R953	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R954	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R955	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R956	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R957	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R958	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R959	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R960	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R961	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R962	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R963	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R964	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R965	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R966	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R967	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R968	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R969	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R970	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R971	1-216-841-11	METAL GLAZE	47K	5%	1/16W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV802	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV803	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV805	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
RV806	1-230-867-11	RES, ADJ, METAL GLAZE 1K	

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*A-7061-982-A PJ-22 BOARD, COMPLETE (Ref.No 5,000 Series)
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CAPACITOR

Ref.No	Part No.	Description				Remark
C901	1-162-638-11	CERAMIC CHIP	1MF		16V	
C903	1-126-094-11	ELECT	4.7MF	20%	16V	
C904	1-126-094-11	ELECT	4.7MF	20%	16V	
C905	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C906	1-162-638-11	CERAMIC CHIP	1MF		16V	
C907	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C908	1-126-153-11	ELECT	22MF	20%	6.3V	
C909	1-126-094-11	ELECT	4.7MF	20%	16V	
C910	1-126-094-11	ELECT	4.7MF	20%	16V	
C912	1-124-229-00	ELECT	33MF	20%	6.3V	
C913	1-124-229-00	ELECT	33MF	20%	6.3V	
C914	1-124-576-11	ELECT	220MF	20%	4V	
C915	1-126-157-11	ELECT	10MF	20%	6.3V	
C916	1-124-576-11	ELECT	220MF	20%	4V	
C917	1-126-157-11	ELECT	10MF	20%	6.3V	
C918	1-126-094-11	ELECT	4.7MF	20%	16V	
C919	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C920	1-126-153-11	ELECT	22MF	20%	6.3V	
C921	1-126-153-11	ELECT	22MF	20%	6.3V	
C923	1-126-094-11	ELECT	4.7MF	20%	16V	
C924	1-163-107-00	CERAMIC CHIP	39PF	5%	50V	
C925	1-163-034-00	CERAMIC CHIP	0.033MF		50V	
C926	1-126-153-11	ELECT	22MF	20%	6.3V	
C927	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C928	1-163-033-00	CERAMIC CHIP	0.022MF		50V	
C929	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C930	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C931	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C932	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C933	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C934	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C935	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C936	1-124-229-00	ELECT	33MF	20%	6.3V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN901	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P	
CN902	*1-566-761-11	PIN, CONNECTOR (PC BOARD) 6P	

When indicating parts by reference number, please include the board name.

PJ-22

Ref.No	Part No.	Description	Remark
CN903	1-566-760-11	PIN, CONNECTOR (PC BOARD) 5P	
CN904	*1-563-308-11	CONNECTOR, BOARD TO BOARD 4P	
CN905	*1-566-763-11	PIN, CONNECTOR (PC BOARD) 8P	

DIODE

Ref.No	Part No.	Description	Remark
D903	8-719-106-43	DIODE RD9.1M-B1	
D904	8-719-106-43	DIODE RD9.1M-B1	
D905	8-719-106-43	DIODE RD9.1M-B1	
D906	8-719-106-43	DIODE RD9.1M-B1	
D907	8-719-106-43	DIODE RD9.1M-B1	
D908	8-719-106-43	DIODE RD9.1M-B1	
D909	8-719-106-43	DIODE RD9.1M-B1	
D910	8-719-106-43	DIODE RD9.1M-B1	
D911	8-719-106-43	DIODE RD9.1M-B1	
D912	8-719-106-43	DIODE RD9.1M-B1	
D919	8-719-400-18	DIODE MA152WK	
D920	8-719-400-18	DIODE MA152WK	
D921	8-719-400-18	DIODE MA152WK	
D922	8-719-400-18	DIODE MA152WK	
D923	8-719-400-18	DIODE MA152WK	
D924	8-719-400-18	DIODE MA152WK	

IC

Ref.No	Part No.	Description	Remark
IC901	8-752-009-51	IC CX20095A	
IC902	8-759-710-09	IC NJM2233AM	

JACK

Ref.No	Part No.	Description	Remark
J901	1-566-850-31	CONNECTOR, (S) TERMINAL 4P (S VIDEO INPUT)	
J902	1-569-368-11	JACK, PIN 3P (AUDIO L/R, VIDEO INPUT)	
J903	1-566-850-31	CONNECTOR, (S) TERMINAL 4P (S VIDEO OUTPUT)	
J904	1-537-142-21	TERMINAL BOARD (AUDIO/RFU DC OUT/VIDEO OUTPUT)	
J905	1-568-956-31	JACK, PIN 2P (AUDIO L/R OUTPUT)	

COIL

Ref.No	Part No.	Description	Remark
L903	1-410-820-41	INDUCTOR 10UH	
L907	1-410-808-41	INDUCTOR 1UH	
L908	1-410-828-41	INDUCTOR 47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q901	8-729-216-22	TRANSISTOR 2SA1162	
Q904	8-729-901-01	TRANSISTOR DTC144EK	
Q905	8-729-100-66	TRANSISTOR 2SC1623	
Q906	8-729-100-66	TRANSISTOR 2SC1623	
Q907	8-729-100-66	TRANSISTOR 2SC1623	
Q908	8-729-271-22	TRANSISTOR 2SC2712G	
Q909	8-729-100-66	TRANSISTOR 2SC1623	
Q910	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q911	8-729-901-01	TRANSISTOR DTC144EK	
Q912	8-729-901-01	TRANSISTOR DTC144EK	
Q913	8-729-901-01	TRANSISTOR DTC144EK	
Q914	8-729-119-76	TRANSISTOR 2SB1175-HFE	
Q915	8-729-100-66	TRANSISTOR 2SC1623	
Q917	8-729-901-01	TRANSISTOR DTC144EK	
Q918	8-729-901-01	TRANSISTOR DTC144EK	
Q919	8-729-216-22	TRANSISTOR 2SA1162	
Q921	8-729-901-01	TRANSISTOR DTC144EK	
Q922	8-729-100-66	TRANSISTOR 2SC1623	
Q923	8-729-100-66	TRANSISTOR 2SC1623	
Q925	8-729-216-22	TRANSISTOR 2SA1162	
Q932	8-729-901-06	TRANSISTOR DTA144EK	
Q933	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

Ref.No	Part No.	Description				Remark
R901	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R902	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R903	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R904	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R905	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R906	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R907	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R908	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R909	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R910	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R911	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R912	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R913	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R914	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R915	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R916	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R919	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R921	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R923	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R924	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R925	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R926	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R927	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R928	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R929	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R930	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R931	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R932	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R933	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R934	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R935	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R936	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R937	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R938	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R939	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R940	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R941	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R942	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R943	1-216-081-00	METAL GLAZE	22K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R944	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R945	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R946	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R947	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R948	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R949	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R950	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R951	1-216-138-00	METAL GLAZE 3.3 5% 1/8W	
R952	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R953	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R954	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R955	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R956	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R957	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R958	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R960	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R961	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R963	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R964	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R965	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R966	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R968	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R972	1-216-295-00	METAL GLAZE 0 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV901	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
RV902	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	
RV903	1-230-866-11	RES, ADJ, METAL GLAZE 470	

SWITCH

Ref.No	Part No.	Description	Remark
SW901	1-571-102-11	SWITCH, SLIDE (EJECT)	
SW902	1-554-945-12	SWITCH, SLIDE (AUDIO Hi-Fi/DIGITAL/MONITOR MIX)	

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*A-7030-171-A AF-DM ASSY (DM-23 BOARD, COMPLETE)

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(Ref.No 1,000 Series)

CAPACITOR

Ref.No	Part No.	Description	Remark
C550	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C553	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C554	1-124-778-00	ELECT CHIP 22MF 20% 6.3V	
C555	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V	
C556	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C557	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C558	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C559	1-124-779-00	ELECT CHIP 10MF 20% 16V	
C560	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C562	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C563	1-162-637-11	CERAMIC CHIP 0.47MF 16V	
C565	1-163-075-00	CERAMIC CHIP 0.047MF 10% 25V	
C566	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C567	1-135-155-21	TANTAL. CHIP 4.7MF 20% 16V	
C568	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C569	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C570	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN550	1-506-467-11	PIN, CONNECTOR 2P	
CN551	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
CN552	1-563-585-11	CONNECTOR, FLEXIBLE 8P	
CN553	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
CN554	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	

DIODE

Ref.No	Part No.	Description	Remark
D550	8-719-404-46	DIODE MA110	

IC

Ref.No	Part No.	Description	Remark
IC551	8-759-100-94	IC UPC358G2	
IC552	8-759-981-82	IC RC3414M	
IC553	8-759-231-23	IC TK10500M	
IC554	8-759-030-35	IC MPC1725M	

COIL

Ref.No	Part No.	Description	Remark
L551	1-410-381-11	INDUCTOR CHIP 10UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q550	8-729-402-84	TRANSISTOR XN4601	
Q551	8-729-805-25	TRANSISTOR 2SB1121	
Q552	8-729-905-35	TRANSISTOR 2SC4081-R	
Q555	8-729-905-35	TRANSISTOR 2SC4081-R	
Q556	8-729-905-23	TRANSISTOR 2SA1576-R	
Q557	8-729-907-00	TRANSISTOR DTC114EU	
Q561	8-729-901-03	TRANSISTOR DTC144WK	
Q562	8-729-402-78	TRANSISTOR XN6401	
Q563	8-729-402-78	TRANSISTOR XN6401	
Q564	8-729-402-42	TRANSISTOR UN5213	
Q568	8-729-402-84	TRANSISTOR XN4601	

RESISTOR

Ref.No	Part No.	Description	Remark
R550	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R551	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R552	1-216-831-11	METAL GLAZE 6.8K 5% 1/16W	
R553	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R554	1-216-134-00	METAL GLAZE 2.2 5% 1/8W	
R555	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R556	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R569	1-216-134-00	METAL GLAZE 2.2 5% 1/8W	
R570	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R571	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R572	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R573	1-216-843-11	METAL GLAZE 68K 5% 1/16W	
R574	1-216-144-00	METAL GLAZE 5.6 5% 1/8W	
R575	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R576	1-216-847-11	METAL GLAZE 150K 5% 1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R577	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R578	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R579	1-216-830-11	METAL GLAZE 5.6K 5% 1/16W	
R580	1-216-834-11	METAL GLAZE 12K 5% 1/16W	
R581	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R582	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R583	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R584	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R585	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R587	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R588	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R594	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R595	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R596	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R597	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R598	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R601	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R604	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R605	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R606	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R607	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R608	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R609	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV551	1-230-875-21	RES, ADJ, METAL GLAZE 220K	

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*A-7062-059-A FD-13 BOARD, COMPLETE (Ref.No 7,000 Series)
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*3-674-372-00 HOLDER (A), LED
*3-742-775-01 HOLDER, LCD

CAPACITOR

Ref.No	Part No.	Description	Remark
C211	1-124-584-00	ELECT 100MF 20%	10V
C212	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C213	1-124-225-00	ELECT 100MF 20%	6.3V
C214	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C215	1-124-257-00	ELECT 2.2MF 20%	35V
C216	1-126-157-11	ELECT 10MF 20%	6.3V
C217	1-126-100-11	ELECT 10MF 20%	6.3V
C218	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C220	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C221	1-124-257-00	ELECT 2.2MF 20%	35V
C222	1-126-100-11	ELECT 10MF 20%	6.3V
C223	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C224	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C226	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C227	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C228	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C229	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C230	1-163-038-00	CERAMIC CHIP 0.1MF	25V

Ref.No	Part No.	Description	Remark
C242	1-124-225-00	ELECT 100MF 20%	6.3V
C243	1-126-157-11	ELECT 10MF 20%	6.3V
C244	1-163-038-00	CERAMIC CHIP 0.1MF	25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN203	*1-566-765-11	PIN, CONNECTOR (PC BOARD) 10P	
CN205	*1-566-197-11	PIN, CONNECTOR (PC BOARD) 4P	
CN206	*1-566-767-11	PIN, CONNECTOR (PC BOARD) 12P	
CN208	*1-565-875-11	PIN, CONNECTOR (PC BOARD) 3P	
CN209	*1-566-185-11	PIN, CONNECTOR (PC BOARD) 6P	
CN211	1-566-536-11	CONNECTOR, FPC (ZIF) 20P	
CN212	1-565-212-11	CONNECTOR, FPC (ZIF) 26P	
CN214	1-565-528-11	PIN, CONNECTOR (PC BOARD) 3P	

DIODE

Ref.No	Part No.	Description	Remark
D201	8-719-812-43	DIODE TLG124A (DIGITAL)	
D202	8-719-951-22	DIODE IMN10	
D203	8-719-940-45	DIODE DWA010	
D204	8-719-940-45	DIODE DWA010	
D205	8-719-951-22	DIODE IMN10	
D206	8-719-951-22	DIODE IMN10	
D207	8-719-404-46	DIODE MA110	
D208	8-719-404-46	DIODE MA110	
D210	8-719-940-45	DIODE DWA010	
D211	8-719-404-46	DIODE MA110	
D212	8-719-938-68	DIODE GL-3HY8 (Hi-Fi)	

IC

Ref.No	Part No.	Description	Remark
IC211	8-759-603-27	IC M5201FP	
IC212	8-759-603-27	IC M5201FP	
IC213	8-759-981-82	IC RC3414M	

DISPLAY PANEL

Ref.No	Part No.	Description	Remark
ND201	1-808-932-11	DISPLAY PANEL, LIQUID CRYSTAL	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q201	8-729-920-39	TRANSISTOR IMT1US	
Q202	8-729-805-25	TRANSISTOR 2SB1121	
Q211	8-729-903-30	TRANSISTOR DTC144TK	
Q212	8-729-903-30	TRANSISTOR DTC144TK	

RESISTOR

Ref.No	Part No.	Description	Remark
R201	1-216-138-00	METAL GLAZE 3.3 5% 1/8W	
R202	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R203	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R204	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R205	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R206	1-216-138-00	METAL GLAZE 3.3 5% 1/8W	
R211	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R213	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R214	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R215	1-216-097-00	METAL GLAZE 100K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R216	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R217	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R218	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R220	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R222	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R224	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R225	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R226	1-216-295-00	METAL GLAZE 0 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S201	1-571-787-11	SWITCH, TACTILE (DATE)	
S202	1-571-787-11	SWITCH, TACTILE (TIME)	
S203	1-571-787-11	SWITCH, TACTILE (COUNTER RESET)	
S204	1-571-787-11	SWITCH, TACTILE (ZERO MEM)	
S205	1-553-977-51	SWITCH, SLIDE (AUTO LOCK)	
S206	1-553-977-00	SWITCH, SLIDE (FOCUS)	
S207	1-571-787-11	SWITCH, TACTILE (PUSH AUTO)	
S208	1-570-871-11	SWITCH, SLIDE (SENS)	
S209	1-571-361-21	SWITCH, ROTARY (WHT BAL)	
S210	1-571-787-11	SWITCH, TACTILE (◺■◿)	
S211	1-571-361-11	SWITCH, ROTARY (SHUTTER SPEED)	
S212	1-571-787-11	SWITCH, TACTILE (STOROBO)	
S213	1-571-787-11	SWITCH, TACTILE (ART)	
S214	1-571-787-11	SWITCH, TACTILE (NR)	
S215	1-571-361-21	SWITCH, ROTARY (EFFECT SELECT)	
S216	1-572-087-11	SWITCH, TACT (INDEX MARK)	
S220	1-553-977-00	SWITCH, SLIDE (MIC)	

TERMINAL PIN

Ref.No	Part No.	Description	Remark
TP201	*1-535-622-11	PIN, TERMINAL	
TP202	*1-535-622-11	PIN, TERMINAL	
TP203	*1-535-622-11	PIN, TERMINAL	
TP204	*1-535-622-11	PIN, TERMINAL	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
VR201	1-237-776-21	RES, VAR, CARBON 10K (IRIS)	
VR211	1-238-882-11	RES, VAR, CARBON 22K/22K (REC LEVEL)	
VR212	1-238-881-11	RES, VAR, CARBON 47K/47K (BALANCE)	

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*A-7062-060-A VF-13 BOARD, COMPLETE (Ref.No 1,000 Series)
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CAPACITOR

Ref.No	Part No.	Description	Remark
C901	1-126-369-11	ELECT 220MF 20%	6.3V
C902	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C904	1-127-515-11	ELECT(SOLID) 47MF 20%	6.3V
C905	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C906	1-163-115-00	CERAMIC CHIP 82PF 5%	50V
C907	⚠1-162-625-11	CERAMIC CHIP 0.0047MF 5%	50V
C908	⚠1-163-015-91	CERAMIC CHIP 0.0033MF 10%	50V
C909	1-126-603-11	ELECT CHIP 4.7MF 20%	35V
C911	1-131-388-00	TANTALUM 68MF 10%	3.15V
C912	1-102-038-00	CERAMIC 0.001MF	500V
C913	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C915	1-126-193-11	ELECT CHIP 1MF 20%	50V
C916	1-163-037-11	CERAMIC CHIP 0.022MF 10%	25V
C917	1-135-166-21	TANTAL. CHIP 47MF 20%	6.3V
C918	1-162-638-11	CERAMIC CHIP 1MF	16V
C919	1-135-070-00	TANTAL. CHIP 0.1MF 10%	35V
C920	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
CN904	*1-566-197-11	PIN, CONNECTOR (PC BOARD) 4P	

CONPOSITION CIRCUIT BLOCK

Ref.No	Part No.	Description	Remark
CP901	1-238-119-11	RES, ADJ	

SOCKET ASSY

Ref.No	Part No.	Description	Remark
CRT901	1-526-978-21	SOCKET ASSY, CRT	

DIODE

Ref.No	Part No.	Description	Remark
D903	8-719-400-20	DIODE MA152WA	

IC

Ref.No	Part No.	Description	Remark
IC901	8-759-420-01	IC AN2512S	

COIL

Ref.No	Part No.	Description	Remark
L901	1-408-421-00	INDUCTOR 100UH	
L902	1-410-384-31	INDUCTOR CHIP 18UH	
L903	⚠1-459-858-11	COIL, FERRITE (HLC)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q902	⚠8-729-402-31	TRANSISTOR 2SD1819A	
Q903	8-729-106-68	TRANSISTOR 2SD1615-A	
Q904	8-729-216-31	TRANSISTOR 2SA1163G	

RESISTOR

Ref.No	Part No.	Description	Remark
R902	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R904	⚠1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R906	⚠1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R907	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R908	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R909	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R911	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R912	1-216-130-11	METAL GLAZE 2.4M 5% 1/10W	
R913	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R914	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R915	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R916	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R917	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R919	1-216-097-00	METAL GLAZE 100K 5% 1/10W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R920	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R921	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R922	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R923	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R924	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R925	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R926	1-218-163-11	METAL GLAZE 120K 1% 1/10W	
R928	1-216-870-11	METAL GLAZE 180K 1% 1/10W	
R929	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R930	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R931	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-230-203-00	RES, ADJ, METAL GLAZE 2.2M	
		TRANSFORMER	
T901	⚠.1-439-481-11	TRANSFORMER ASSY, FLYBACK	
		THERMISTOR	
TH901	1-807-938-11	THERMISTOR	

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Ref.No	Part No.	Description	Remark
	*A-7062-068-A	VC-54 BOARD, COMPLETE (Ref.No 1,000 Series) **********************	
	A-7068-143-A	DT-73 (HIC) BOARD, COMPLETE	
	1-574-480-11	CABLE, FLAT (1.0MM PITCH) 34P	
	1-574-856-11	CABLE, FLAT (1.0MM PITCH) 20P	
	1-574-878-11	WIRE, FLAT TYPE PVC (16 CORE)	
		CAPACITOR	
C221	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C222	1-124-778-00	ELECT CHIP 22MF 20%	6.3V
C223	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C224	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C225	1-126-204-11	ELECT CHIP 47MF 20%	16V
C226	1-124-778-00	ELECT CHIP 22MF 20%	6.3V
C227	1-126-204-11	ELECT CHIP 47MF 20%	16V
C228	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C229	1-135-092-21	TANTAL. CHIP 3.3MF 20%	16V
C230	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C231	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C232	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C234	1-162-964-11	CERAMIC CHIP 0.001MF 10%	50V
C235	1-126-602-11	ELECT CHIP 3.3MF 20%	50V
C236	1-163-036-00	CERAMIC CHIP 0.068MF	50V
C237	1-126-400-11	ELECT CHIP 22MF 20%	35V
C238	1-135-089-21	TANTAL. CHIP 6.8MF 20%	20V
C239	1-162-962-11	CERAMIC CHIP 470PF 10%	50V
C241	1-162-919-11	CERAMIC CHIP 22PF 5%	50V
C242	1-126-205-11	ELECT CHIP 47MF 20%	6.3V
C243	1-135-181-21	TANTAL. CHIP 4.7MF 20%	6.3V
C244	1-162-974-11	CERAMIC CHIP 0.01MF	50V
C245	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C246	1-126-204-11	ELECT CHIP 47MF 20%	16V
C258	1-163-036-00	CERAMIC CHIP 0.068MF	50V
C261	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C262	1-162-964-11	CERAMIC CHIP 0.001MF 10%	50V
C263	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C264	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C265	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C266	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C267	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C268	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C269	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C271	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C272	1-135-156-21	TANTAL. CHIP 6.8MF 20%	10V
C273	1-162-970-11	CERAMIC CHIP 0.01MF 10%	25V
C279	1-162-945-11	CERAMIC CHIP 22PF 5%	50V
C283	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C285	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C287	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C288	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C290	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C291	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C292	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C293	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C294	1-162-949-11	CERAMIC CHIP 47PF 5%	50V
C295	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
		CONNECTOR	
CN221	1-568-112-11	CONNECTOR, BOARD TO BOARD 6P	
CN222	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P	
		DIODE	
D222	8-719-404-49	DIODE MA111	
D223	8-719-404-49	DIODE MA111	
D224	8-719-404-49	DIODE MA111	
D225	8-719-404-49	DIODE MA111	
		FILTER	
FL221	1-236-368-11	LPF (YH)	
FL222	1-415-634-21	DL (LC)	
		IC	
IC261	8-752-326-08	IC CXD1159Q	
		COIL	
L221	1-412-031-11	INDUCTOR CHIP 47UH	
L222	1-412-034-21	INDUCTOR CHIP 330UH	
L223	1-410-192-51	INDUCTOR CHIP 1UH	
L224	1-412-032-11	INDUCTOR CHIP 100UH	
L225	1-410-192-51	INDUCTOR CHIP 1UH	
L226	1-410-192-51	INDUCTOR CHIP 1UH	
L227	1-410-192-51	INDUCTOR CHIP 1UH	

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Ref.No	Part No.	Description	Remark
L228	1-410-192-51	INDUCTOR CHIP 1UH	
L229	1-410-192-51	INDUCTOR CHIP 1UH	
L230	1-412-029-11	INDUCTOR CHIP 10UH	
L262	1-410-204-31	INDUCTOR CHIP 10UH	
L263	1-410-192-51	INDUCTOR CHIP 1UH	
		TRANSISTOR	
Q221	8-729-809-88	TRANSISTOR 2SA1416-S	
Q222	8-729-810-01	TRANSISTOR 2SC3646-S	
Q223	8-729-402-84	TRANSISTOR XN4601	
Q224	8-729-905-23	TRANSISTOR 2SA1576	
Q225	8-729-402-84	TRANSISTOR XN4601	
Q226	8-729-402-84	TRANSISTOR XN4601	
Q227	8-729-402-84	TRANSISTOR XN4601	
Q228	8-729-402-84	TRANSISTOR XN4601	
Q229	8-729-402-84	TRANSISTOR XN4601	
Q230	8-729-905-23	TRANSISTOR 2SA1576	
Q260	8-729-905-35	TRANSISTOR 2SC4081-R	
		RESISTOR	
R189	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R195	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R199	1-216-820-11	METAL GLAZE 820 5% 1/16W	
R221	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R223	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R225	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R226	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R227	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R228	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R229	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R230	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R231	1-216-005-00	METAL GLAZE 15 5% 1/10W	
R232	1-216-005-00	METAL GLAZE 15 5% 1/10W	
R233	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R234	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R235	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R236	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R237	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R238	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R239	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R241	1-216-820-11	METAL GLAZE 820 5% 1/16W	
R242	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R243	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R245	1-216-822-11	METAL GLAZE 1.2K 5% 1/16W	
R246	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R247	1-216-673-11	METAL CHIP 8.2K 0.50% 1/10W	
R248	1-216-068-00	METAL GLAZE 6.2K 5% 1/10W	
R249	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R250	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R251	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R252	1-216-689-11	METAL CHIP 39K 0.50% 1/10W	
R253	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R254	1-216-837-11	METAL GLAZE 22K 5% 1/16W	

Ref.No	Part No.	Description	Remark
R255	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R256	1-216-842-11	METAL GLAZE 56K 5% 1/16W	
R257	1-216-843-11	METAL GLAZE 68K 5% 1/16W	
R258	1-216-832-11	METAL GLAZE 8.2K 5% 1/16W	
R259	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R260	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R261	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R262	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R265	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R266	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R267	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R268	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R269	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R270	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R271	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R272	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R273	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R274	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R275	1-216-848-11	METAL GLAZE 180K 5% 1/16W	
R276	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R278	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R279	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R280	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R291	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R292	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R293	1-216-843-11	METAL GLAZE 68K 5% 1/16W	
R294	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R295	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R296	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R297	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R298	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R299	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R300	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R477	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R478	1-216-864-11	METAL GLAZE 0 5% 1/16W	
		CRYSTAL	
X221	1-567-898-11	OSCILLATOR, CRYSTAL	

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*A-7062-069-A VC-55 BOARD, COMPLETE (Ref.No 2,000 Series)
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A-7068-144-A MX-7 (HIC) BOARD, COMPLETE

A-7068-145-A CP-20 (HIC) BOARD, COMPLETE

Ref.No	Part No.	Description	Remark
		CAPACITOR	
C301	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C302	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C303	1-126-206-11	ELECT CHIP 100MF 20% 6.3V	
C304	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C305	1-162-942-11	CERAMIC CHIP 12PF 5% 50V	
C306	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C307	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C308	1-126-206-11	ELECT CHIP 100MF 20% 6.3V	
C309	1-164-156-11	CERAMIC CHIP 0.1MF 25V	

When indicating parts by reference number, please include the board name.

VC-55

Ref.No	Part No.	Description		Remark
C310	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C311	1-162-920-11	CERAMIC CHIP 27PF	5%	50V
C312	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C313	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C314	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C316	1-162-943-11	CERAMIC CHIP 15PF	5%	50V
C317	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C318	1-162-638-11	CERAMIC CHIP 1MF		16V
C319	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C320	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C330	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C331	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C332	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C333	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C334	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C335	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C336	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C337	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C338	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C339	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C340	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C341	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C342	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C343	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C400	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C401	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C402	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C403	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C404	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C405	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C406	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C407	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C408	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C409	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C410	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C411	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C412	1-162-638-11	CERAMIC CHIP 1MF		16V
C413	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C414	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C415	1-124-566-11	ELECT 120MF	20%	6.3V
C416	1-162-920-11	CERAMIC CHIP 27PF	5%	50V
C417	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C418	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C419	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C420	1-164-156-11	CERAMIC CHIP 0.1MF		25V
C421	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C422	1-162-964-11	CERAMIC CHIP 0.001MF	10%	50V
C424	1-162-915-11	CERAMIC CHIP 10PF	0.5PF	50V
C425	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C429	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C430	1-135-180-21	TANTAL. CHIP 3.3MF	20%	6.3V
C431	1-162-926-11	CERAMIC CHIP 82PF	5%	50V
C432	1-162-919-11	CERAMIC CHIP 22PF	5%	50V

Ref.No	Part No.	Description		Remark
C433	1-162-916-11	CERAMIC CHIP 12PF	5%	50V
C434	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C435	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C436	1-162-974-11	CERAMIC CHIP 0.01MF		50V
C437	1-135-149-21	TANTAL. CHIP 2.2MF	20%	10V
C438	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C439	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C440	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C446	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C447	1-162-949-11	CERAMIC CHIP 47PF	5%	50V
C448	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V
C449	1-162-970-11	CERAMIC CHIP 0.01MF	10%	25V

CONNECTOR

CN301	*1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P

DIODE

D312	8-719-404-34	DIODE MA141WA
D313	8-719-404-46	DIODE MA110
D314	8-719-104-34	DIODE 1S2836

FILTER

FL301	1-236-187-11	FILTER, LOW PASS
FL302	1-236-190-11	FILTER, LOW PASS
FL303	1-236-192-11	FILTER, LOW PASS
FL304	1-236-196-11	LPF
FL305	1-415-635-21	DL (LC)
FL306	1-415-638-11	DL, LC

IC

IC301	8-759-031-88	IC MC68HC05N4FU
IC302	8-759-106-23	IC UPD4066BG
IC303	8-759-100-95	IC UPC324G2
IC304	8-752-033-70	IC CXA1072R
IC305	8-759-946-00	IC MB88341PFV
IC306	8-759-101-12	IC UPC311G2

COIL

L301	1-412-029-11	INDUCTOR CHIP 10UH
L302	1-410-204-31	INDUCTOR CHIP 10UH
L341	1-410-215-31	INDUCTOR CHIP 82UH
L344	1-410-204-31	INDUCTOR CHIP 10UH
L345	1-410-180-51	INDUCTOR CHIP 0.1UH

TRANSISTOR

Q300	8-729-905-35	TRANSISTOR 2SC4081
Q301	8-729-402-78	TRANSISTOR XN6401
Q302	8-729-905-35	TRANSISTOR 2SC4081
Q303	8-729-905-35	TRANSISTOR 2SC4081
Q304	8-729-905-35	TRANSISTOR 2SC4081
Q305	8-729-905-35	TRANSISTOR 2SC4081
Q306	8-729-905-23	TRANSISTOR 2SA1576

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q307	8-729-905-35	TRANSISTOR 2SC4081	
Q308	8-729-905-35	TRANSISTOR 2SC4081	
Q321	8-729-905-99	TRANSISTOR DTC114TU	
Q322	8-729-403-10	TRANSISTOR XN6215	
Q323	8-729-403-07	TRANSISTOR XN1213	
Q324	8-729-905-35	TRANSISTOR 2SC4081	
Q325	8-729-905-35	TRANSISTOR 2SC4081	
Q326	8-729-403-10	TRANSISTOR XN6215	
Q327	8-729-402-78	TRANSISTOR XN6401	
Q351	8-729-905-23	TRANSISTOR 2SA1576	
Q352	8-729-905-23	TRANSISTOR 2SA1576	
Q354	8-729-905-35	TRANSISTOR 2SC4081	
Q355	8-729-402-84	TRANSISTOR XN4601	
Q356	8-729-403-10	TRANSISTOR XN6215	
Q358	8-729-905-35	TRANSISTOR 2SC4081	
Q359	8-729-905-35	TRANSISTOR 2SC4081	
Q360	8-729-905-35	TRANSISTOR 2SC4081	
Q361	8-729-402-84	TRANSISTOR XN4601	

RESISTOR

Ref.No	Part No.	Description				Remark
R301	1-216-832-11	METAL GLAZE	8.2K	5%	1/16W	
R302	1-216-822-11	METAL GLAZE	1.2K	5%	1/16W	
R303	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R304	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R305	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R306	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R307	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R308	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R309	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R310	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R311	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R312	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R313	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R314	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R315	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R316	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R317	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R319	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R320	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R321	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R322	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R323	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R324	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R325	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R326	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R328	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R330	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R332	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R333	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R334	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R335	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R336	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R337	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	

Ref.No	Part No.	Description				Remark
R338	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R339	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R340	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R341	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R342	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R343	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R344	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R345	1-216-851-11	METAL GLAZE	330K	5%	1/16W	
R346	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R347	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R350	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R351	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R352	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R353	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R355	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R356	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R357	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R358	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R359	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R360	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R361	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R362	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R363	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R364	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R365	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R366	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R367	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R368	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R369	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R370	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R371	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R372	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R373	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R374	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R375	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R381	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R382	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R384	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R385	1-216-816-11	METAL GLAZE	390	5%	1/16W	
R386	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R387	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R388	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R389	1-216-844-11	METAL GLAZE	82K	5%	1/16W	
R390	1-216-846-11	METAL GLAZE	120K	5%	1/16W	
R391	1-216-864-11	METAL GLAZE	0	5%	1/16W	
R394	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R395	1-216-836-11	METAL GLAZE	18K	5%	1/16W	
R396	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R397	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R398	1-216-835-11	METAL GLAZE	15K	5%	1/16W	
R399	1-216-840-11	METAL GLAZE	39K	5%	1/16W	
R404	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R405	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R406	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R407	1-216-824-11	METAL GLAZE 1.8K 5% 1/16W	
R408	1-216-827-11	METAL GLAZE 3.3K 5% 1/16W	
R409	1-216-853-11	METAL GLAZE 470K 5% 1/16W	
R410	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R411	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R412	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R413	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R414	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R415	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R416	1-216-842-11	METAL GLAZE 56K 5% 1/16W	
R417	1-216-842-11	METAL GLAZE 56K 5% 1/16W	
R418	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R419	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R420	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R421	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R422	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R423	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R424	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R425	1-216-834-11	METAL GLAZE 12K 5% 1/16W	
R426	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R427	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R428	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R429	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R430	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R431	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R432	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R433	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R434	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R435	1-216-134-00	METAL GLAZE 2.2 5% 1/8W	
R436	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R439	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R440	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R441	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R442	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R443	1-216-818-11	METAL GLAZE 560 5% 1/16W	
R444	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R445	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R446	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R447	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R448	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R449	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R450	1-216-841-11	METAL GLAZE 47K 5% 1/16W	

TERMINAL PIN

Ref.No	Part No.	Description	Remark
TP301	*1-535-622-11	PIN, TERMINAL	
TP302	*1-535-622-11	PIN, TERMINAL	

FLEXIBLE BOARD

Ref.No	Part No.	Description	Remark
W302	1-633-615-11	FP-239 FLEXIBLE BOARD	

CRYSTAL

Ref.No	Part No.	Description	Remark
X301	1-577-118-11	VIBRATOR, LITHIUM NIOBATE	

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*A-7030-171-A AF-DM ASSY (AF-47 BOARD, COMPLETE)
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(Ref.No 3,000 Series)

CAPACITOR

Ref.No	Part No.	Description	Remark
C451	1-162-638-11	CERAMIC CHIP 1MF 16V	
C452	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C453	1-135-180-21	TANTAL. CHIP 3.3MF 20% 6.3V	
C454	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C455	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C456	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C457	1-135-180-21	TANTAL. CHIP 3.3MF 20% 6.3V	
C458	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C459	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C460	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C461	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C462	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C463	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C464	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C465	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C466	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C467	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C470	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C471	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C472	1-135-157-21	TANTAL. CHIP 10MF 20% 6.3V	
C473	1-135-145-11	TANTAL. CHIP 0.47MF 20% 25V	
C474	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C475	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C477	1-162-941-11	CERAMIC CHIP 10PF 0.5PF 50V	
C478	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C479	1-162-974-11	CERAMIC CHIP 0.01MF 50V	
C480	1-162-970-11	CERAMIC CHIP 0.01MF 10% 25V	
C481	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C482	1-162-964-11	CERAMIC CHIP 0.001MF 10% 50V	
C483	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C484	1-135-157-21	TANTAL. CHIP 10MF 20% 6.3V	
C485	1-135-145-11	TANTAL. CHIP 0.47MF 20% 25V	
C487	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C490	1-162-957-11	CERAMIC CHIP 220PF 5% 50V	
C491	1-162-928-11	CERAMIC CHIP 120PF 5% 50V	
C492	1-135-177-21	TANTAL. CHIP 1MF 20% 20V	
C493	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C494	1-162-966-11	CERAMIC CHIP 0.0022MF 10% 50V	
C495	1-164-156-11	CERAMIC CHIP 0.1MF 25V	
C496	1-126-395-11	ELECT CHIP 22MF 20% 16V	
C498	1-164-156-11	CERAMIC CHIP 0.1MF 25V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		CONNECTOR	
CN451	1-566-536-11	CONNECTOR, FPC (ZIF) 20P	
CN452	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
CN453	*1-565-542-21	PIN, CONNECTOR (PC BOARD) 3P	
CN454	*1-563-582-11	CONNECTOR, FLEXIBLE 5P	
CN455	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P	
CN456	*1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
		DIODE	
D451	8-719-404-46	DIODE MA110	
D454	8-719-404-46	DIODE MA110	
D455	8-719-404-32	DIODE MA141WA	
		FILTER	
FL451	1-236-209-11	FILTER, LOW PASS	
		IC	
IC451	8-752-326-18	IC CXD1204R	
IC452	8-759-031-76	IC MC68HC05C4-SC403774	
IC453	8-759-971-93	IC MSM6219GS-VK	
IC454	8-759-946-00	IC MB88341PFV	
IC455	8-759-100-95	IC UPC324G2	
IC456	8-759-937-56	IC S-8054ALB-LM	
IC457	8-759-103-25	IC UPD4053BG	
IC458	8-759-979-41	IC LM358PS	
IC459	8-759-030-74	IC SC14S66F	
		COIL	
L451	1-410-381-11	INDUCTOR CHIP 10UH	
L452	1-410-655-31	INDUCTOR CHIP 120UH	
		TRANSISTOR	
Q451	8-729-403-10	TRANSISTOR XN6215	
Q452	8-729-905-35	TRANSISTOR 2SC4081	
Q453	8-729-905-35	TRANSISTOR 2SC4081	
Q454	8-729-905-35	TRANSISTOR 2SC4081	
Q455	8-729-402-19	TRANSISTOR XN6501	
Q456	8-729-402-84	TRANSISTOR XN4601	
Q459	8-729-905-23	TRANSISTOR 2SA1576-R	
Q463	8-729-905-35	TRANSISTOR 2SC4081	
Q464	8-729-905-35	TRANSISTOR 2SC4081	
Q468	8-729-905-23	TRANSISTOR 2SA1576-R	
Q469	8-729-402-84	TRANSISTOR XN4601	
		RESISTOR	
R453	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R454	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R455	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R456	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R458	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R459	1-216-835-11	METAL GLAZE 15K 5% 1/16W	

Ref.No	Part No.	Description	Remark
R460	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R461	1-216-842-11	METAL GLAZE 56K 5% 1/16W	
R462	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R463	1-216-849-11	METAL GLAZE 220K 5% 1/16W	
R464	1-216-832-11	METAL GLAZE 8.2K 5% 1/16W	
R465	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R466	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R467	1-216-844-11	METAL GLAZE 82K 5% 1/16W	
R468	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R469	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R470	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R471	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R472	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R473	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R474	1-216-840-11	METAL GLAZE 39K 5% 1/16W	
R480	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R481	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R482	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R483	1-216-685-11	METAL CHIP 27K 0.50% 1/10W	
R484	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R485	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R488	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R489	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R491	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R493	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R494	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R495	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R496	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R497	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R498	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R499	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R500	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R501	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R502	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R503	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R504	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R505	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R506	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R507	1-216-828-11	METAL GLAZE 3.9K 5% 1/16W	
R508	1-216-864-11	METAL GLAZE 0 5% 1/16W	
R509	1-216-857-11	METAL GLAZE 1M 5% 1/16W	
R510	1-216-839-11	METAL GLAZE 33K 5% 1/16W	
R512	1-216-849-11	METAL GLAZE 220K 5% 1/16W	
R513	1-216-847-11	METAL GLAZE 150K 5% 1/16W	
R514	1-216-854-11	METAL GLAZE 560K 5% 1/16W	
R515	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R517	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R518	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R519	1-216-842-11	METAL GLAZE 56K 5% 1/16W	
R520	1-216-834-11	METAL GLAZE 12K 5% 1/16W	
R521	1-216-826-11	METAL GLAZE 2.7K 5% 1/16W	
R522	1-216-825-11	METAL GLAZE 2.2K 5% 1/16W	
R523	1-216-818-11	METAL GLAZE 560 5% 1/16W	

When indicating parts by reference number, please include the board name.

AF-47 DI-21

Ref.No	Part No.	Description				Remark
R524	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R525	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R526	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R527	1-216-842-11	METAL GLAZE	56K	5%	1/16W	
R528	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R529	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R531	1-216-134-00	METAL GLAZE	2.2	5%	1/8W	
R532	1-216-144-00	METAL GLAZE	5.6	5%	1/8W	
R533	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R534	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R537	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R538	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R540	1-216-813-11	METAL GLAZE	220	5%	1/16W	
R541	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R542	1-216-831-11	METAL GLAZE	6.8K	5%	1/16W	
R543	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	
R544	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R545	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R546	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R547	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R548	1-216-823-11	METAL GLAZE	1.5K	5%	1/16W	
R549	1-216-830-11	METAL GLAZE	5.6K	5%	1/16W	

BOARD

Ref.No	Part No.	Description
W451	1-629-190-11	FP-155 BOARD

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`*A-7062-172-A  DI-21  BOARD, COMPLETE (Ref.No 5,000`
`              **********************        Series)`

CAPACITOR

Ref.No	Part No.	Description				Remark
C620	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C621	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C623	1-124-779-00	ELECT CHIP	10MF	20%	16V	
C624	1-124-779-00	ELECT CHIP	10MF	20%	16V	
C626	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C627	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C629	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C630	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C631	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	
C634	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C635	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C636	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C637	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C639	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C640	1-126-206-11	ELECT CHIP	100MF	20%	6.3V	
C641	1-126-206-11	ELECT CHIP	100MF	20%	6.3V	
C642	1-126-206-11	ELECT CHIP	100MF	20%	6.3V	
C643	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C644	1-163-139-00	CERAMIC CHIP	820PF	5%	50V	
C645	1-126-205-11	ELECT CHIP	47MF	20%	6.3V	
C646	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C647	1-126-193-11	ELECT CHIP	1MF	20%	50V	
C648	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C649	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C650	1-164-182-11	CERAMIC CHIP	0.0033MF	10%	50V	
C651	1-126-602-11	ELECT CHIP	3.3MF	20%	50V	
C652	1-126-193-11	ELECT CHIP	1MF	20%	50V	
C653	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C654	1-163-098-00	CERAMIC CHIP	16PF	5%	50V	
C655	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C656	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C657	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C660	1-126-205-11	ELECT CHIP	47MF	20%	6.3V	
C661	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C662	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C663	1-124-499-11	ELECT	1MF	20%	50V	
C665	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C666	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C667	1-124-499-11	ELECT	1MF	20%	50V	
C669	1-126-193-11	ELECT CHIP	1MF	20%	50V	
C673	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C674	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C675	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C676	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C677	1-126-205-11	ELECT CHIP	47MF	20%	6.3V	
C678	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C680	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V	
C681	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C682	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C683	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C685	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C686	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C687	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C688	1-126-206-11	ELECT CHIP	100MF	20%	6.3V	
C689	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C690	1-164-232-11	CERAMIC CHIP	0.01MF		50V	
C691	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C692	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C693	1-124-779-00	ELECT CHIP	10MF	20%	16V	
C694	1-124-778-00	ELECT CHIP	22MF	20%	6.3V	
C695	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C696	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C697	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C698	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C699	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C700	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C701	1-126-205-11	ELECT CHIP	47MF	20%	6.3V	
C702	1-126-205-11	ELECT CHIP	47MF	20%	6.3V	
C703	1-126-206-11	ELECT CHIP	100MF	20%	6.3V	
C705	1-126-205-11	ELECT CHIP	47MF	20%	6.3V	
C706	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	
C707	1-124-779-00	ELECT CHIP	10MF	20%	16V	
C708	1-163-110-00	CERAMIC CHIP	51PF	5%	50V	
C709	1-164-232-11	CERAMIC CHIP	0.01MF		50V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C710	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C711	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C712	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C713	1-126-601-11	ELECT CHIP 2.2MF	20%	50V
C714	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C715	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C716	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C717	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C718	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C720	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C721	1-135-161-21	TANTAL. CHIP 22MF	20%	6.3V
C722	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C723	1-124-778-00	ELECT CHIP 22MF	20%	6.3V
C724	1-126-206-11	ELECT CHIP 100MF	20%	6.3V
C725	1-126-205-11	ELECT CHIP 47MF	20%	6.3V
C726	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C727	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C729	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C730	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C731	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C732	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C733	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C734	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C735	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C736	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C737	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C738	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C739	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C740	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C741	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C742	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C743	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C744	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C745	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C746	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C747	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C748	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C749	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C750	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C751	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C752	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C753	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C754	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C755	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C756	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C757	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C758	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C759	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C760	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C761	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C762	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C763	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C764	1-164-232-11	CERAMIC CHIP 0.01MF		50V

Ref.No	Part No.	Description		Remark
C765	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C766	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C767	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C768	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C769	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C770	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C771	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C772	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C773	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C774	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C775	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C776	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C777	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C778	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C779	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C780	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C781	1-164-232-11	CERAMIC CHIP 0.01MF		50V
C783	1-135-162-21	TANTAL. CHIP 33MF	20%	6.3V
C785	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C787	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C788	1-163-092-00	CERAMIC CHIP 9PF	0.25PF	50V
C789	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C791	1-163-129-00	CERAMIC CHIP 330PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description
CN601	*1-566-190-11	PIN, CONNECTOR (PC BOARD) 11P
CN602	*1-566-187-11	PIN, CONNECTOR (PC BOARD) 8P
CN603	*1-565-882-11	PIN, CONNECTOR (PC BOARD) 10P
CN604	*1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P
CN605	1-506-482-11	PIN, CONNECTOR 3P

DIODE

Ref.No	Part No.	Description
D701	8-713-300-88	DIODE 1T33C-01
D702	8-713-300-88	DIODE 1T33C-01
D703	8-713-300-88	DIODE 1T33C-01
D704	8-719-400-18	DIODE MA152WK
D706	8-719-949-46	DIODE 1T32
D707	8-719-940-45	DIODE DWA010
D708	8-719-940-45	DIODE DWA010
D709	8-719-949-46	DIODE 1T32
D710	8-719-400-18	DIODE MA152WK
D711	8-719-400-18	DIODE MA152WK

FERRITE BEAD

Ref.No	Part No.	Description
FB601	1-543-256-11	BEAD, FERRITE
FB602	1-543-256-11	BEAD, FERRITE
FB603	1-543-256-11	BEAD, FERRITE
FB604	1-543-256-11	BEAD, FERRITE
FB605	1-543-256-11	BEAD, FERRITE
FB606	1-543-256-11	BEAD, FERRITE

FILTER

Ref.No	Part No.	Description
FL601	1-421-927-21	FILTER, NOISE

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
FL602	1-421-927-21	FILTER, NOISE	
		IC	
IC701	8-759-987-17	IC CXD1226Q	
IC702	8-759-987-18	IC CXD1227Q	
IC703	8-759-987-19	IC CXD1228Q	
IC704	8-759-987-20	IC CXD1229Q	
IC705	8-752-332-15	IC CXK1206M	
IC706	8-752-332-15	IC CXK1206M	
IC707	8-752-332-15	IC CXK1206M	
IC708	8-752-329-21	IC CXD1175M	
IC709	8-752-329-21	IC CXD1175M	
IC710	8-752-032-96	IC CXA1106M	
IC711	8-752-032-96	IC CXA1106M	
IC712	8-759-202-32	IC MC74HC163P	
IC713	8-759-011-65	IC MC74HC4053F	
IC714	8-759-011-65	IC MC74HC4053F	
IC716	8-759-206-28	IC TC74HC123F	
IC717	8-759-916-25	IC SN74HC32NS	
IC718	8-759-925-76	IC SN74HC08NS	
IC719	8-759-710-29	IC NJM2235M	
IC720	8-759-710-09	IC NJM2233AM	
		COIL	
L601	1-410-389-31	INDUCTOR CHIP 47UH	
L602	1-410-389-31	INDUCTOR CHIP 47UH	
L604	1-408-785-21	INDUCTOR CHIP 47UH	
L605	1-408-785-21	INDUCTOR CHIP 47UH	
L606	1-408-785-21	INDUCTOR CHIP 47UH	
L607	1-410-393-11	INDUCTOR CHIP 100UH	
L608	1-410-389-31	INDUCTOR CHIP 47UH	
L609	1-410-383-31	INDUCTOR CHIP 15UH	
L610	1-410-383-31	INDUCTOR CHIP 15UH	
L611	1-410-377-31	INDUCTOR CHIP 4.7UH	
L612	1-408-785-21	INDUCTOR CHIP 47UH	
L614	1-408-785-21	INDUCTOR CHIP 47UH	
L615	1-408-785-21	INDUCTOR CHIP 47UH	
L616	1-410-389-31	INDUCTOR CHIP 47UH	
L617	1-410-656-11	INDUCTOR CHIP 150UH	
L618	1-410-380-31	INDUCTOR CHIP 8.2UH	
L619	1-410-390-11	INDUCTOR CHIP 56UH	
L620	1-410-383-31	INDUCTOR CHIP 15UH	
L621	1-410-384-31	INDUCTOR CHIP 18UH	
L622	1-410-389-31	INDUCTOR CHIP 47UH	
L623	1-410-389-31	INDUCTOR CHIP 47UH	
L624	1-410-389-31	INDUCTOR CHIP 47UH	
L625	1-410-388-21	INDUCTOR CHIP 39UH	
L626	1-410-388-21	INDUCTOR CHIP 39UH	
		TRANSISTOR	
Q601	8-729-100-66	TRANSISTOR 2SC1623	
Q602	8-729-100-66	TRANSISTOR 2SC1623	
Q603	8-729-100-66	TRANSISTOR 2SC1623	
Q604	8-729-100-66	TRANSISTOR 2SC1623	
Q605	8-729-100-66	TRANSISTOR 2SC1623	
Q606	8-729-100-66	TRANSISTOR 2SC1623	
Q607	8-729-100-66	TRANSISTOR 2SC1623	
Q608	8-729-100-66	TRANSISTOR 2SC1623	
Q609	8-729-216-22	TRANSISTOR 2SA1162	
Q610	8-729-100-66	TRANSISTOR 2SC1623	
Q611	8-729-100-66	TRANSISTOR 2SC1623	
Q612	8-729-100-66	TRANSISTOR 2SC1623	
Q613	8-729-100-66	TRANSISTOR 2SC1623	
Q614	8-729-100-66	TRANSISTOR 2SC1623	
Q615	8-729-100-66	TRANSISTOR 2SC1623	
Q616	8-729-109-44	TRANSISTOR 2SK94	
Q617	8-729-901-01	TRANSISTOR DTC144EK	
Q618	8-729-100-66	TRANSISTOR 2SC1623	
Q619	8-729-100-66	TRANSISTOR 2SC1623	
Q620	8-729-100-66	TRANSISTOR 2SC1623	
Q621	8-729-100-66	TRANSISTOR 2SC1623	
Q622	8-729-100-66	TRANSISTOR 2SC1623	
Q623	8-729-100-66	TRANSISTOR 2SC1623	
Q624	8-729-100-66	TRANSISTOR 2SC1623	
Q625	8-729-100-66	TRANSISTOR 2SC1623	
Q626	8-729-100-66	TRANSISTOR 2SC1623	
Q627	8-729-100-66	TRANSISTOR 2SC1623	
Q628	8-729-100-66	TRANSISTOR 2SC1623	
Q629	8-729-901-01	TRANSISTOR DTC144EK	
Q630	8-729-100-66	TRANSISTOR 2SC1623	
Q631	8-729-100-66	TRANSISTOR 2SC1623	
Q632	8-729-100-66	TRANSISTOR 2SC1623	
		RESISTOR	
R601	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R602	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R603	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R604	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R605	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R606	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R607	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R608	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R609	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R610	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R611	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R612	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R613	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R614	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R615	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R616	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R617	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R618	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R619	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R620	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R621	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R624	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R625	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R626	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R627	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R628	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R629	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R630	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R631	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R632	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R633	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R634	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R635	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R636	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R637	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R638	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R639	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R640	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R641	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R642	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R643	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R644	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R645	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R646	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R647	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R648	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R649	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R650	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R652	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R653	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R654	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R655	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R656	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R657	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R658	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R659	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R660	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R661	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R662	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R663	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R664	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R665	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R666	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R671	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R675	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R676	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R678	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R679	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R680	1-216-111-00	METAL GLAZE	390K	5%	1/10W	
R681	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R682	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R683	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R684	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R685	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R686	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R687	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R688	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R689	1-216-111-00	METAL GLAZE	390K	5%	1/10W	
R690	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R691	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R692	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R693	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R694	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R695	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R696	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R700	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R701	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R712	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R713	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R714	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R716	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R717	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R720	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R721	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R722	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R723	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R724	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R725	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R726	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R727	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R728	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R729	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R730	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R731	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R732	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R733	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R734	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R735	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R736	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R737	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R738	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R739	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R740	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R741	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R742	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R743	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R744	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R745	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R746	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R747	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R748	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R749	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R750	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R751	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R752	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R753	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R754	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R755	1-216-295-00	METAL GLAZE	0	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R756	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R757	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R758	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R759	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R760	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R761	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R762	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R763	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R764	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R765	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R767	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R768	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R769	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R770	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R771	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R772	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R773	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R774	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R775	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R776	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R777	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R778	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R779	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R780	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R781	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R782	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R783	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R784	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R785	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R786	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R787	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R788	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R789	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R790	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R791	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R792	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R793	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R794	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R797	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R798	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R800	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R801	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R802	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R804	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R805	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R806	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R807	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R808	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R809	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R810	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R811	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R812	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R813	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R814	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R815	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R816	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R817	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R818	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R825	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R826	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R827	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R828	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R829	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R830	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R831	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R832	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R833	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R834	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R835	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R836	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R837	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R838	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R839	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R840	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R841	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R842	1-216-295-00	METAL GLAZE	0	5%	1/10W	

VARIABLE RESISTOR

RV602	1-230-866-11	RES, ADJ, METAL GLAZE 470
RV603	1-230-866-11	RES, ADJ, METAL GLAZE 470
RV604	1-230-870-11	RES, ADJ, METAL GLAZE 10K
RV605	1-230-870-11	RES, ADJ, METAL GLAZE 10K

TRIMMER

VC701	1-141-311-11	CAP, VAR, TRIMMER (CHIP)

CRYSTAL

X701	1-527-722-00	OSCILLATOR, CRYSTAL
X703	1-567-900-11	VIBRATOR, CRYSTAL

DIODE

ZD601	8-719-105-40	DIODE RD3.0M-B2
ZD602	8-719-105-40	DIODE RD3.0M-B2

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*1-633-589-11 CC-27 BOARD (Ref.No 6,000 Series)

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CONNECTOR

CN001	1-566-529-11	CONNECTOR, FPC (ZIF) 13P
CN002	1-566-527-11	CONNECTOR, FPC (ZIF) 11P
CN003	1-566-530-11	CONNECTOR, FPC (ZIF) 14P

DIODE

D001	8-719-404-40	DIODE MA121

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
D002	8-719-404-40	DIODE MA121	
D003	8-719-400-18	DIODE MA152WK	

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*1-633-596-11 FU-70 BOARD (Ref.No 7,000 Series)
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CAPACITOR

C601	1-124-570-11	ELECT 220MF 20%	16V
C602	1-124-570-11	ELECT 220MF 20%	16V
C603	1-124-570-11	ELECT 220MF 20%	16V

CONNECTOR

CN601	*1-566-115-11	CONNECTOR, BOARD TO BOARD 4P	
CN604	*1-566-184-11	PIN, CONNECTOR (PC BOARD) 5P	
CN605	*1-566-186-11	PIN, CONNECTOR (PC BOARD) 7P	
CN606	1-506-481-11	PIN, CONNECTOR 2P	

FUSE

F601	⚠.1-532-778-21	FUSE, MICRO (SECONDARY)	
F602	⚠.1-532-778-21	FUSE, MICRO (SECONDARY)	
F603	⚠.1-532-778-21	FUSE, MICRO (SECONDARY)	
F604	⚠.1-532-778-21	FUSE, MICRO (SECONDARY)	
F605	⚠.1-532-778-21	FUSE, MICRO (SECONDARY)	

COIL

L601	1-410-337-11	INDUCTOR 1UH	
L602	1-410-337-11	INDUCTOR 1UH	
L603	1-410-337-11	INDUCTOR 1UH	
L604	1-410-337-11	INDUCTOR 1UH	
L605	1-410-337-11	INDUCTOR 1UH	
L606	1-410-337-11	INDUCTOR 1UH	

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*1-633-597-11 DC-25 BOARD (Ref.No 8,000 Series)
****

JACK

J610	1-569-398-11	JACK (DC IN 7.5V)	

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*A-7071-007-A CD-13 BOARD, COMPLETE (Ref.No 2,000 Series)
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*3-734-418-01 PROTECTOR, HIC

CAPACITOR

Ref.No	Part No.	Description	Remark
C200	1-124-778-00	ELECT CHIP 22MF 20%	6.3V
C201	1-135-146-21	TANTAL. CHIP 0.68MF 20%	25V
C202	1-164-232-11	CERAMIC CHIP 0.01MF 10%	50V
C203	1-126-200-11	ELECT CHIP 10MF 20%	35V
C204	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C205	1-164-161-11	CERAMIC CHIP 0.0022MF 10%	50V
C206	1-126-601-11	ELECT CHIP 2.2MF 20%	50V
C207	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C208	1-135-159-21	TANTAL. CHIP 10MF 20%	20V
C209	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C210	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V
C211	1-162-638-11	CERAMIC CHIP 1MF	16V
C212	1-163-037-11	CERAMIC CHIP 0.022MF 10%	25V
C213	1-135-162-21	TANTAL. CHIP 33MF 20%	6.3V
C214	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C215	1-163-009-11	CERAMIC CHIP 0.001MF 10%	50V

CONNECTOR

CN201	1-566-516-11	CONNECTOR, FPC (ZIF) 16P	

DIODE

D200	8-719-404-32	DIODE MA141WA	
D201	8-719-404-46	DIODE MA110	

TRANSISTOR

Q200	8-729-421-23	TRANSISTOR XN1216	
Q201	8-729-905-35	TRANSISTOR 2SC4081	
Q202	8-765-105-53	TRANSISTOR 2SK300-3	
Q203	8-729-402-84	TRANSISTOR XN4601	

RESISTOR

R200	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R201	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R202	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R203	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R204	1-216-107-00	METAL GLAZE 270K 5%	1/10W
R205	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R206	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R207	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R208	1-216-039-00	METAL GLAZE 390 5%	1/10W
R209	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R210	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R211	1-216-025-00	METAL GLAZE 100 5%	1/10W
R212	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R213	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R215	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R216	1-216-089-00	METAL GLAZE 47K 5%	1/10W

****

*1-633-603-11 DK-3 BOARD (Ref.No 2,000 Series)
****

CONNECTOR

CN761	*1-565-884-11	PIN, CONNECTOR (PC BOARD) 12P	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

When indicating parts by reference number, please include the board name.

DK-3 | LR-11 | LL-11 | HJ-5 | SW-113 | VJ-6

DIODE

Ref.No	Part No.	Description	Remark
D761	8-719-951-22	DIODE IMN10	
D762	8-719-951-22	DIODE IMN10	
D763	8-719-951-22	DIODE IMN10	
D764	8-719-951-22	DIODE IMN10	

SWITCH

Ref.No	Part No.	Description	Remark
S761	1-553-977-00	SWITCH, SLIDE (DIGITAL EFECT)	
S762	1-571-787-11	SWITCH, TACTILE (STOPMOTION)	
S763	1-571-787-11	SWITCH, TACTILE (FLUSHMOTION)	
S764	1-571-787-11	SWITCH, TACTILE (MULTI)	
S765	1-571-787-11	SWITCH, TACTILE (CLEAR)	
S766	1-571-102-11	SWITCH, SLIDE (INT REC)	
S767	1-571-787-11	SWITCH, TACTILE (SLOW ADJ ▲)	
S768	1-571-787-11	SWITCH, TACTILE (SLOW ADJ ▼)	
S770	1-553-977-00	SWITCH, SLIDE (Hi8)	
S771	1-553-977-00	SWITCH, SLIDE (EDIT)	
S772	1-553-977-00	SWITCH, SLIDE (SPEAKER)	

****

*1-633-607-11 LR-11 BOARD (Ref.No 9,000 Series)
****

****

*1-633-606-11 LL-1 BOARD (Ref.No 3,000 Series)
****

****

*1-633-594-11 HJ-5 BOARD (Ref.No 7,000 Series)
****

CONNECTOR

Ref.No	Part No.	Description	Remark
CN861	*1-566-190-11	PIN, CONNECTOR (PC BOARD) 11P	
CN862	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	

DIODE

Ref.No	Part No.	Description	Remark
D863	8-719-106-43	DIODE RD9.1M-B1	
D864	8-719-106-43	DIODE RD9.1M-B1	
D865	8-719-106-43	DIODE RD9.1M-B1	
D866	8-719-106-43	DIODE RD9.1M-B1	
D867	8-719-106-43	DIODE RD9.1M-B1	
D868	8-719-106-43	DIODE RD9.1M-B1	

JACK

Ref.No	Part No.	Description	Remark
J862	1-562-785-11	JACK (PHONE)	
J863	1-562-785-21	JACK (MONO MIC)	

COIL

Ref.No	Part No.	Description	Remark
L861	1-410-192-51	INDUCTOR CHIP 1UH	
L862	1-410-192-51	INDUCTOR CHIP 1UH	
L863	1-410-192-51	INDUCTOR CHIP 1UH	
L864	1-410-192-51	INDUCTOR CHIP 1UH	
L865	1-410-192-51	INDUCTOR CHIP 1UH	

RESISTOR

Ref.No	Part No.	Description	Remark
R861	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R862	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV861	1-238-266-11	RES, VAR, CARBON 10K (PHONE LEVEL)	

SWITCH

Ref.No	Part No.	Description	Remark
S863	1-554-088-00	SWITCH, KEY BOARD (START/STOP)	

****

*1-633-599-11 SW-113 BOARD (Ref.No 8,000 Series)
****

CONNECTOR

Ref.No	Part No.	Description	Remark
CN821	*1-565-875-11	PIN, CONNECTOR (PC BOARD) 3P	
CN822	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P	

DIODE

Ref.No	Part No.	Description	Remark
D821	8-719-940-45	DIODE DWA010	

SWITCH

Ref.No	Part No.	Description	Remark
S821	1-570-689-11	SWITCH, KEY BOARD (START/STOP)	
S822	1-553-977-00	SWITCH, SLIDE (STANDBY)	

****

*1-633-598-11 VJ-6 BOARD (Ref.No 9,000 Series)
****

CAPACITOR

Ref.No	Part No.	Description	Remark
C805	1-124-469-71	ELECT 220MF 20% 6.3V	
C811	1-163-009-11	CERAMIC CHIP 0.001MF 50V	
C812	1-163-009-11	CERAMIC CHIP 0.001MF 50V	
C813	1-164-232-11	CERAMIC CHIP 0.01MF 50V	
C814	1-164-232-11	CERAMIC CHIP 0.01MF 50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN811	*1-566-197-11	PIN, CONNECTOR (PC BOARD) 4P	
CN812	*1-566-200-11	PIN, CONNECTOR (PC BOARD) 7P	
CN813	1-562-183-00	SOCKET 8P	

DIODE

Ref.No	Part No.	Description	Remark
D818	8-719-106-43	DIODE RD9.1M-B1	
D819	8-719-106-43	DIODE RD9.1M-B1	

JACK

Ref.No	Part No.	Description	Remark
J813	1-565-276-11	JACK, ULTRA SMALL 1P (REMOTE)	

When indicating parts by reference number, please include the board name.

COIL

Ref.No	Part No.	Description	Remark
L815	1-410-369-11	INDUCTOR CHIP 1UH	
L816	1-410-369-11	INDUCTOR CHIP 1UH	
L817	1-410-369-11	INDUCTOR CHIP 1UH	
L818	1-408-958-21	INDUCTOR 1UH	

RESISTOR

Ref.No	Part No.	Description	Remark
R812	1-216-295-00	METAL GLAZE 0 5% 1/10W	

****

*1-633-604-11 VK-2 BOARD (Ref.No 3,000 Series)

****

DIODE

Ref.No	Part No.	Description	Remark
D731	8-719-951-22	DIODE IMN10	
D732	8-719-951-22	DIODE IMN10	
D733	8-719-951-22	DIODE IMN10	
D734	8-719-951-22	DIODE IMN10	
D735	8-719-951-22	DIODE IMN10	
D736	8-719-104-34	DIODE 1S2835	

SWITCH

Ref.No	Part No.	Description	Remark
S731	1-571-787-11	SWITCH, TACTILE (■)	
S732	1-571-787-11	SWITCH, TACTILE (◀◀)	
S733	1-571-787-11	SWITCH, TACTILE (▶)	
S734	1-571-787-11	SWITCH, TACTILE (▶▶)	
S735	1-571-787-11	SWITCH, TACTILE (PAUSE)	
S736	1-571-787-11	SWITCH, TACTILE (FRAME)	
S737	1-571-787-11	SWITCH, TACTILE (SLOW)	
S738	1-571-787-11	SWITCH, TACTILE (INDEX)	
S739	1-571-787-11	SWITCH, TACTILE (MARK)	
S740	1-571-787-11	SWITCH, TACTILE (ERASE)	
S741	1-571-787-11	SWITCH, TACTILE (DATA SCREEN)	
S742	1-571-102-11	SWITCH, SLIDE (AUDIO DUB)	
S743	1-571-101-12	SWITCH, SLIDE (POWER)	
S744	1-571-102-11	SWITCH, SLIDE (REC)	
S745	1-553-977-51	SWITCH, SLIDE (+ VTR)	

****

*1-633-602-11 CK-18 BOARD (Ref.No 1,000 Series)

****

CONNECTOR

Ref.No	Part No.	Description	Remark
CN701	1-566-531-11	CONNECTOR, FPC (ZIF) 15P	
CN702	*1-566-182-11	PIN, CONNECTOR (PC BOARD) 3P	

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-951-22	DIODE IMN10	
D702	8-719-951-22	DIODE IMN10	
D703	8-719-951-22	DIODE IMN10	
D704	8-719-951-22	DIODE IMN10	

SWITCH

Ref.No	Part No.	Description	Remark
S701	1-571-787-11	SWITCH, TACTILE (FADER)	
S702	1-571-787-11	SWITCH, TACTILE (DIGITAL ZOOM)	
S703	1-554-592-21	SWITCH, KEY BOARD (EDITSEARCH +)	
S704	1-554-592-21	SWITCH, KEY BOARD (EDITSEARCH -)	
S705	1-571-787-11	SWITCH, TACTILE (P IN S)	
S706	1-571-787-11	SWITCH, TACTILE (TITLE 1)	
S707	1-571-787-11	SWITCH, TACTILE (TITLE 2)	
S708	1-571-787-11	SWITCH, TACTILE (MEMORY)	
S709	1-571-787-11	SWITCH, TACTILE (COLOR/MODE)	
S710	1-571-787-11	SWITCH, TACTILE (PICTURE)	

****

*1-633-605-11 IR-20 BOARD (Ref.No 8,000 Series)

****

CAPACITOR

Ref.No	Part No.	Description	Remark
C701	1-126-154-11	ELECT 47MF 20% 6.3V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN704	1-506-469-11	PIN, CONNECTOR 4P	
CN705	1-506-469-11	PIN, CONNECTOR 4P	

DIODE

Ref.No	Part No.	Description	Remark
D707	8-719-400-18	DIODE MA152WK	

IC

Ref.No	Part No.	Description	Remark
IC701	8-741-100-64	IC SBX1621-51	
IC702	8-741-100-64	IC SBX1621-51	

RESISTOR

Ref.No	Part No.	Description	Remark
R701	1-216-017-00	METAL GLAZE 47 5% 1/10W	

****

*1-633-593-11 MJ-23 BOARD (Ref.No 7,000 Series)

****

CAPACITOR

Ref.No	Part No.	Description	Remark
C731	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C732	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C733	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C734	1-124-589-11	ELECT 47MF 20% 16V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN731	*1-566-185-11	PIN, CONNECTOR (PC BOARD) 6P	
CN732	1-506-469-11	PIN, CONNECTOR 4P	

DIODE

Ref.No	Part No.	Description	Remark
D737	8-719-106-43	DIODE RD9.1M-B1	
D738	8-719-106-43	DIODE RD9.1M-B1	

When indicating parts by reference number, please include the board name.

MJ-23 LI-12 TL-18 TL-19 FP-89 FP-90

Ref.No	Part No.	Description	Remark
		JACK	
J733	1-507-797-41	JACK, LARGE TYPE (MIC L/R)	
		COIL	
L731	1-410-192-51	INDUCTOR CHIP 1UH	
L732	1-410-192-51	INDUCTOR CHIP 1UH	
L733	1-410-192-51	INDUCTOR CHIP 1UH	
		RESISTOR	
R731	1-216-019-00	METAL GLAZE 56 5% 1/10W	
R732	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R733	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

****

Ref.No	Part No.	Description	Remark
	*1-633-600-11	LI-12 BOARD (Ref.No 6,000 Series) ************	
	1-550-104-32	HOLDER, BATTERY	
		CONNECTOR	
CN801	*1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P	
		SWITCH	
S801	1-570-871-11	SWITCH, SLIDE (SUB/MAIN/ST)	

****

Ref.No	Part No.	Description	Remark
		TL-18 BOARD (Ref.No 2,000 Series) ************	
		DIODE	
D950	8-719-941-34	DIODE GL1HD51	
		RESISTOR	
R950	1-216-033-00	METAL GLAZE 220 5% 1/10W	

****

Ref.No	Part No.	Description	Remark
		TL-19 BOARD (Ref.No 4,000 Series) ************	
		DIODE	
D955	8-719-941-34	DIODE GL1HD51	

****

Ref.No	Part No.	Description	Remark
	1-628-060-12	FP-89 FLEXIBLE BOARD (Ref.No 7,000 Sries) **********************	
	1-572-253-11	SWITCH, SLIDE (ENCODER)	
	3-728-869-02	HOLDER, SENSOR	
		DIODE	
D301	8-719-820-44	PHOTE COUPLER TLP907-0	
		TRANSISTOR	
Q301	8-729-906-48	TRANSISTOR EE-TP109	
		SWITCH	
S901	1-571-099-11	SWITCH (CASETTE DOWN)	

****

Ref.No	Part No.	Description	Remark
	1-628-061-12	FP-90 FLEXIBLE BOARD (Ref.No 8,000 Sries) *********************	
	3-728-837-01	HOLDER, LED	
	3-728-869-02	HOLDER, SENSOR	
		DIODE	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-820-44	PHOTE COUPLER TLP907-0	
		TRANSISTOR	
Q302	8-729-906-48	TRANSISTOR EE-TP109	
		SWITCH	
S902	1-572-298-11	SWITCH, PUSH (ME/MP, MP HG, REC PROOF)	

****

Ref.No	Part No.	Description	Remark
		MISCELLANEOUS *************	
	⚠1-451-357-12	DEFLECTION YOKE	
	⚠1-466-063-21	UNIT, DC-DC CONVERTER 1	
	⚠1-466-291-11	CONVERTER UNIT, DC-DC 2	
	1-503-293-00	SPEAKER	
	1-520-499-41	METER, LEVEL (L)	
	1-520-499-41	METER, LEVEL (R)	
	1-537-241-61	TERMINAL BOARD (BATTERY)	
	1-542-137-11	MICROPHONE, STEREO (C-2028)	
	1-542-138-11	MICROPHONE ASSY, NARATION	
	1-542-139-11	CAPSULE (C-1025), MICROPHONE	
	1-547-334-13	LENS, ZOOM (VCL-1108YB)	
	1-572-213-11	SWITCH, LEAF	
	1-575-436-11	WIRE, FLAT TYPE PVC (10 CORE)	
	1-575-441-11	CORD, CONNECTION (WITH 8P PLUG)	
	1-575-447-11	WIRE, FLAT TYPE 7P	
	1-575-448-11	WIRE, FLAT TYPE 8P	
	1-629-777-11	FP-203 FLEXIBLE BOARD	
	1-633-612-11	FP-213 FLEXIBLE BOARD	
	1-633-613-11	FP-215 FLEXIBLE BOARD	
	1-633-617-11	FP-241 FLEXIBLE BOARD	
	1-633-618-11	FP-311 FLEXIBLE BOARD	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifé.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
	1-808-505-12	SENSOR (DEW)	
	3-707-581-01	SW ASSY, F LIMIT	
	3-707-763-01	SENSOR ASSY, F	
	8-750-011-83	IU022BN-10C (CCD IMAGER)	
M901	A-7048-335-A	DRUM ASSY (DGU-59A-R)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-160-A	MOTOR ASSY, THREADING (LOADING)	
M904	3-707-583-01	METER ASSY, EE (IRIS)	
M905	3-707-580-01	MOTOR ASSY, PZ GEAR (ZOOM)	
M906	3-707-576-01	MOTOR ASSY, AF GEAR (FOCUS)	
S901	1-571-373-11	SWITCH, PUSH (ZOOM T/W)	
V901	⚠.1-546-084-11	CATHODE-RAY TUBE, B/W (C1M50P45)	

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ACCESSORIES AND PACKING MATERIALS

`*********************************`

Part No.	Description	Remark
A-7019-204-A	VF-263 ASSY	
*3-704-281-01	BAG, PROTECTION (STANDARD)	
*3-742-861-01	CUSHION (UPPER)	
*3-742-862-01	CUSHION (LOWER)	
3-751-086-21	MANUAL, INSTRUCTION (ENGLISH/FRENCH/SPANISH) (US/Canadian)	
3-751-086-71	MANUAL, INSTRUCTION (ENGLISH/FRENCH/SPANISH) (E MODEL)	

**** ACCESSORIES AND PACKING MATERIALS (KIT) ****

1-465-395-11	COMMANDER, REMOTE (RMT-500)
1-571-163-31	SWITCH, ANTENNA ,CHANGE (CABLE)(E MODEL)
1-575-334-21	CORD, CONNECTION
*1-575-335-21	CORD, CONNECTION
*3-704-478-01	SHEET (B), BLIND
3-712-595-21	BELT, SHOULDER
3-742-852-01	COVER (A), JACK
3-742-853-01	COVER (B), JACK
*3-742-858-11	INDIVIDUAL, CARTON
*3-742-860-01	SLEEVE, ACC KIT
*3-742-863-01	CUSHION, ACC
*3-742-864-01	LID, ACC CUSHION
3-751-703-11	INSTRUCTION
** AC-V50	AC POWER ADAPTOR
*** NP-77H	BATTERY PACK

Note

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.

*** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

`****************************************************************`

HARDWARE LIST

`*************`

Ref.No	Part No.	Description	Remark
	7-621-255-20	SCREW +P 2X4	
	7-621-772-08	SCREW +B 2X3	
	7-621-772-30	SCREW +B 2X6	
	7-621-772-40	SCREW +B 2X8	
	7-621-772-88	SCREW +B 2X16	
	7-627-555-88	SCREW, PRECISION +P 1.4X1.8	
	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
	7-671-112-11	BALL, STEEL	
	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
	7-685-135-19	SCREW +BTP 2.6X10 TYPE2 N-S	
	7-621-255-35	SCREW +BVTT 2X5 (S)	

`****************************************************************`

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

When indicating parts by reference number, please include the board name.

SECTION 7
CAMERA BLOCK ADJUSTMENTS

During adjustment, see the arrangement diagram for adjustment parts from page 318.

7-1. PRE-ADJUSTMENT PREPARATIONS (CAMERA BLOCK)

7-1-1. List of Servicing Jigs

- Oscilloscope
- Color monitor
- Regulated power supply (2 units)
- Vectorscope
- Adjusting screwdriver
- Electronic calculator
- Stopwatch

Ref. No.	Part Name	Part No.	Use
J-1	Filter (C14)	J-6080-058-A	Auto white balance confirmation
J-2	ND filter 0.4	J-6080-806-A	Iris adjustment, iris in/out adjustment (two used)
	ND filter 0.1	J-6080-807-A	Iris adjustment, max. gain adjustment Iris in/out adjustment Auto focus LLA adjustment (two used)
	ND filter 0.9	J-6080-833-A	Max. gain adjustment
	ND filter 1.0	J-6080-808-A	Max. gain adjustment, auto focus LLA adjustment (two used)
J-3	Pattern box PTB-500	J-6029-140-A	
J-4	Pattern box color chart	J-6020-250-A	
J-5	Extension cable K (4P 1.5 mm pitch)	J-6082-069-A	Connection of VC-55 and DI-21 boards
	Extension cable (6P 1.5 mm pitch)	J-6082-036-A	Connection of DC-DC converter and VC-54 board
	Extension cable M (2P 2 mm pitch)	J-6080-873-A	Connection of DC-DC converter and FU-70 board
	Extension cable K (4P 2 mm pitch)	J-6080-871-A	Connection of DC-DC converter and FU-70 board
	Extension cable (3P 2 mm pitch)	J-6080-872-A	Connection of PC-35 board and DC-DC converter (2)
J-6	Extension cable (4P 1.5 mm pitch)	J-6082-031-A	Connection of VC-54 and AF-47 boards Connection of FD-13 and SS-95 boards
	Extension cable (8P 1.25 mm pitch)	J-6082-032-A	Connection of SS-95 board and DC-DC converter
	Extension cable (5P 1.25 mm pitch)	J-6082-034-A	Connection of FD-13 and AF-47 boards
	Extension cable (7P 1.25 mm pitch)	J-6082-033-A	Connection of SS-95 board and DC-DC converter
J-7	Extension cable (2P 1.5 mm pitch)	J-6080-912-A	Connection of VI-66 and DI-21 boards
J-8	Extension cable (22P 1 mm pitch)	J-6082-037-A	Connection of PC-35 and SS-95 boards
	Extension cable (18P 1 mm pitch)	J-6082-030-A	Connection of SS-95 and VC-55 boards
J-9	Camera securing jig	J-6080-894-A	
J-10	Siemens star	J-6080-875-A	Flange back adjustment
J-11	Adjustment remote controller	J-6082-053-A	
J-12	AF microprocessor data reading jig	J-6082-025-A	

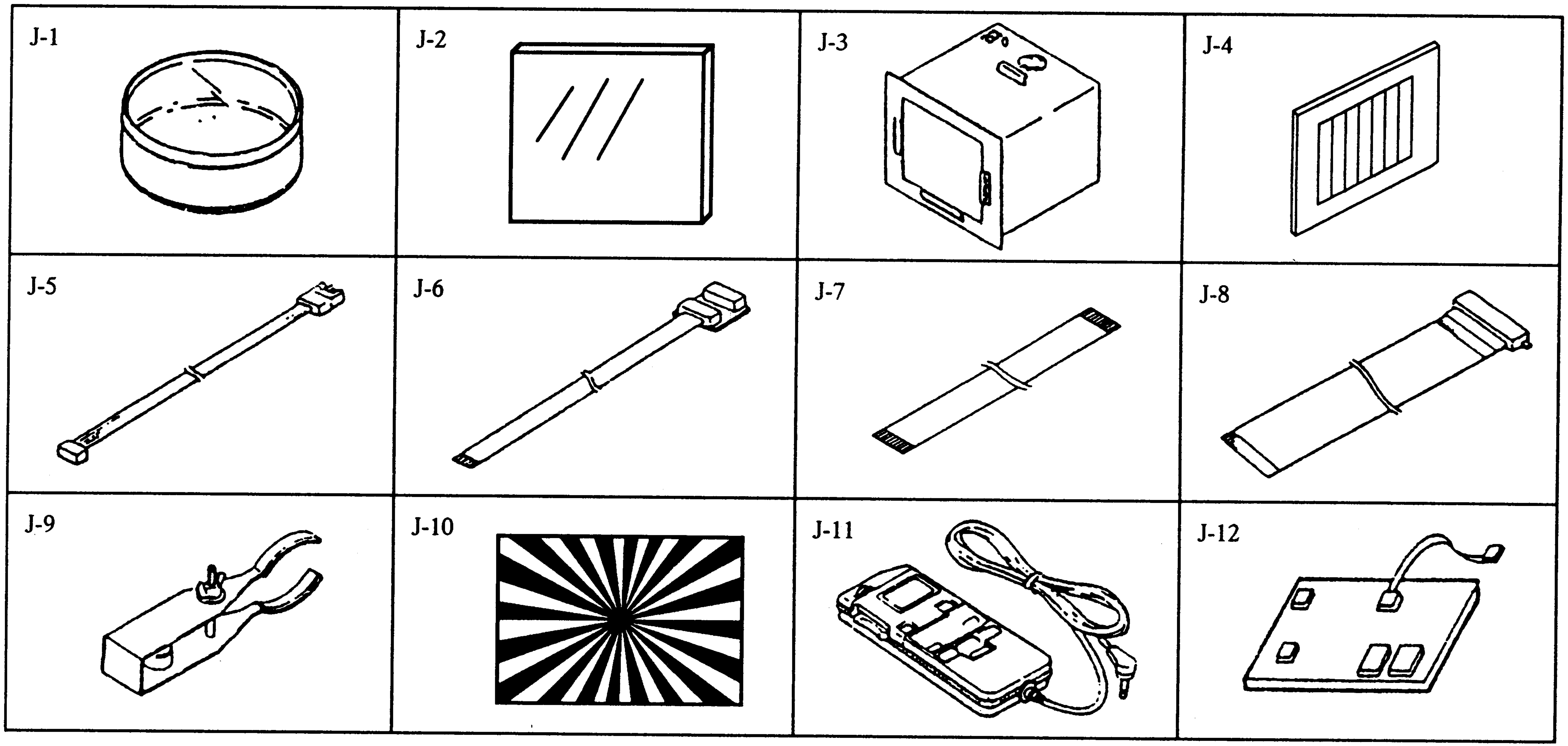


Fig. 7-1.

7-1-2. Preparations

Note: Refer to "SECTION 2 DISASSEMBLY" for details on removal of the cabinet and various boards.

1) Set up the camera block as shown in Fig. 7-2.
2) Connect the camera and video blocks using extension cables, and the various devices for adjustment as shown in Fig. 7-3.
3) The EVF (electronic viewfinder) is needed for confirmation of the white balance mode and shutter speed. This can confirmed on the monitor screen by turning on DATA SCREEN (ON/OFF by S741 on VK-2 board).
4) The left cabinet block is not needed for adjustment except VJ-6 board. If it will be obstacle to the adjustments, remove it by disconnecting the following connectors. (Only VJ-6 board is required for connecting the adjustment remote controller or EVF. Remove the set screw to remove from the cabinet.)
   1. CN861 on the HJ-5 board
   2. CN821 on the SW-113 board
      Note: For camera stand-by states, connect Pins ① and ③ of CN821 with diode (1SS119 or the like). (Pin ① as a cathode, refer to Fig. 7-3.)
      Or connect to the FD-13 board with an external cable.
   3. CN551 on the DM-23 board

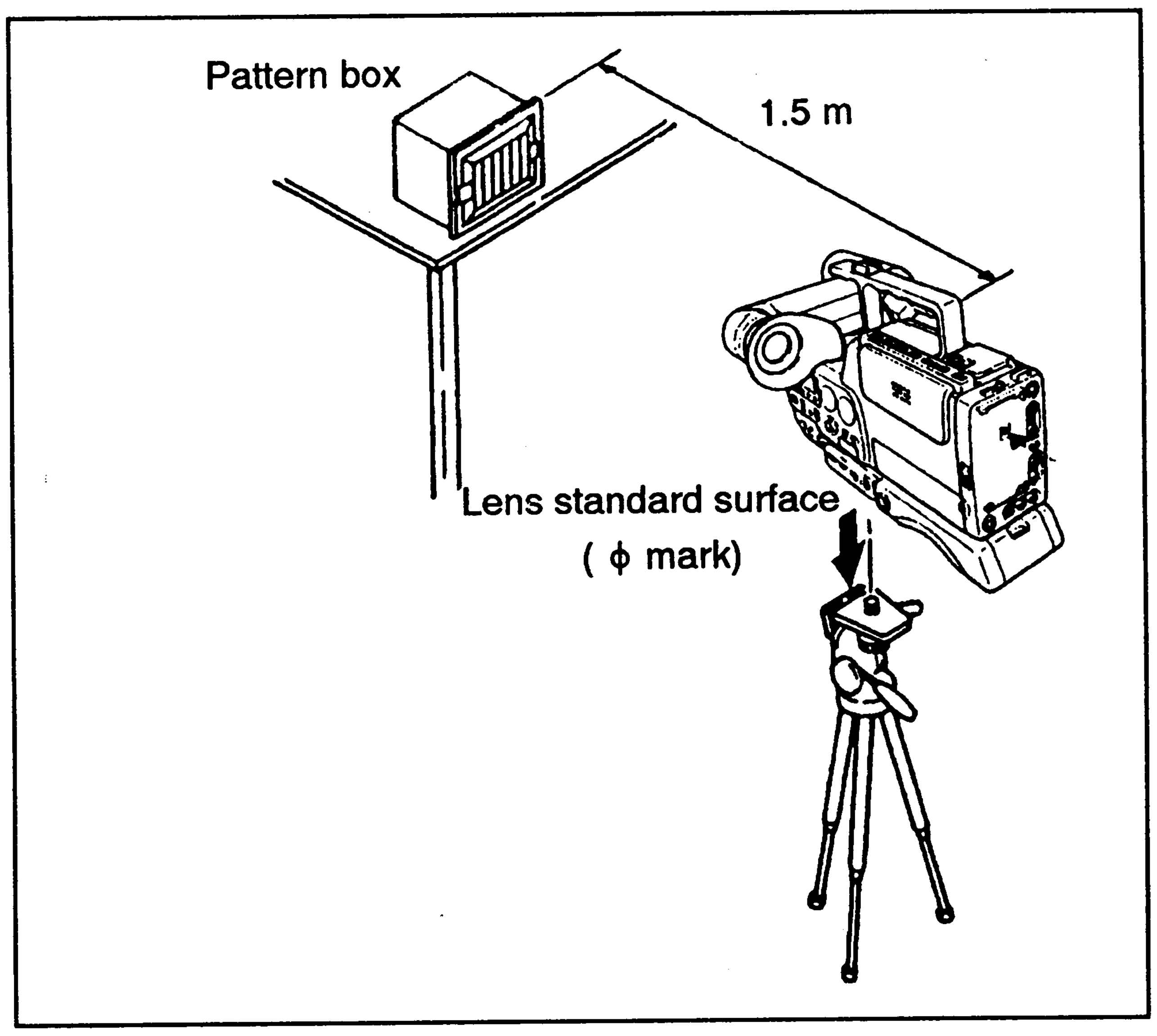
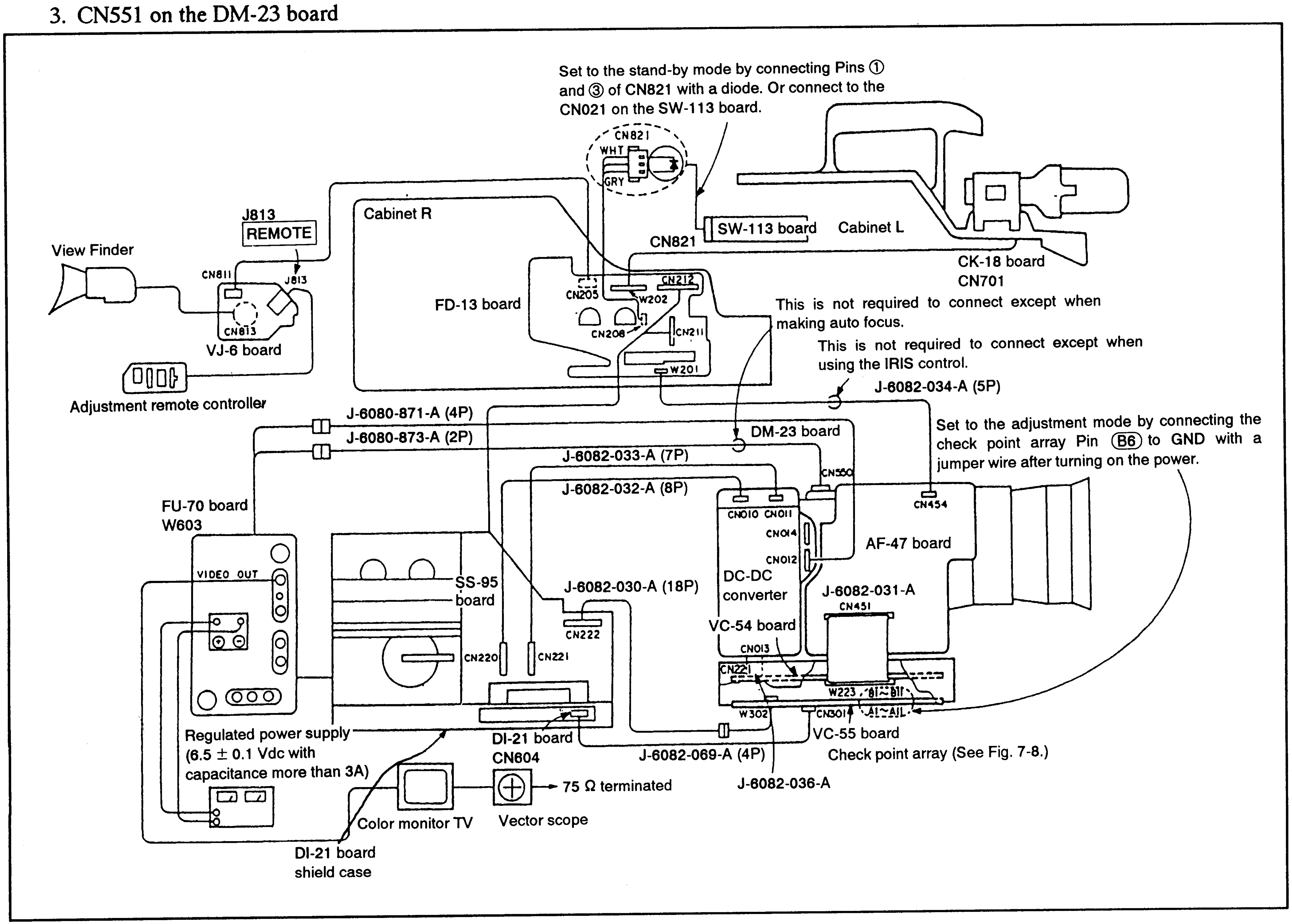

Pattern box
1.5 m
Lens standard surface
(ϕ mark)

Fig. 7-2.


Set to the stand-by mode by connecting Pins ① and ③ of CN821 with a diode. Or connect to the CN021 on the SW-113 board.

This is not required to connect except when making auto focus.

This is not required to connect except when using the IRIS control.

Set to the adjustment mode by connecting the check point array Pin (B6) to GND with a jumper wire after turning on the power.

Regulated power supply (6.5 ± 0.1 Vdc with capacitance more than 3A)

CN821
WHT
GRY
J813
REMOTE
View Finder
CN811
J813
CN813
VJ-6 board
Adjustment remote controller
Cabinet R
FD-13 board
CN205
CN212
W202
CN208
CN211
W201
CN821
SW-113 board
Cabinet L
CK-18 board
CN701
J-6082-034-A (5P)
J-6080-871-A (4P)
J-6080-873-A (2P)
J-6082-033-A (7P)
J-6082-032-A (8P)
DM-23 board
CN550
CN454
CN010 CN011
CN014
CN012
AF-47 board
FU-70 board
W603
VIDEO OUT
SS-95 board
J-6082-030-A (18P)
DC-DC converter
VC-54 board
J-6082-031-A
CN451
CN222
CN220
CN221
CN013
CN221
W223
B1~B11
A1~A11
W302
CN301
DI-21 board
CN604
J-6082-069-A (4P)
VC-55 board
Check point array (See Fig. 7-8.)
75 Ω terminated
J-6082-036-A
Color monitor TV
Vector scope
DI-21 board shield case

Fig. 7-3.

7-1-3. Precautions

1. Setting of switches

Unless otherwise specified, the switches are set to the following positions and adjustment is made without a cassette inserted.

- Camera block

1. CAMERA/VTR power switch
   (S743 on VK-2 board)......CAMERA
2. +VTR switch (S745 on VK-2 board)......ON
3. STANDBY switch (S822 on SW-113 board)......STANDBY
4. AUTO LOCK switch (S205 on FD-13 board)......OFF
5. FOCUS switch (S206 on FD-13 board)......MANUAL
6. WHITE BALANCE switch
   (S209 on FD-13 board)...... ☼ (indoors)
7. IRIS control (RV201 on FD-13 board)......Mechanical center
8. SHUTTER switch
   (S211 on FD-13 board)......NORMAL (1/60)
9. SENS switch (S208 on FD-13 board)......NORMAL
10. DIGITAL EFECT switch (S761 on FD-13 board)......OFF

2. Adjustment order

As a rule, the adjustments are performed in the listed order.

3. Subjects

1) Color bar chart (standard picture frame)
   When performing adjustment using the color bar chart, adjust the picture frame shown in Fig. 7-4.
2) White pattern (standard picture frame)
   Remove the color bar chart from the pattern box and use the zoom lever so that the white pattern has the same size and is the same position as the color bar chart (standard picture frame).
3) All white pattern
   Remove the color bar chart from the pattern box and turn the zoom lever to its TELE-end position.
4) Siemens star (J-6080-875-A)
   Adjust the direction of the camera so that center of the Siemens star is lined up with the center of the monitor screen on the monitor TV screen.

Color bar chart standard picture frame

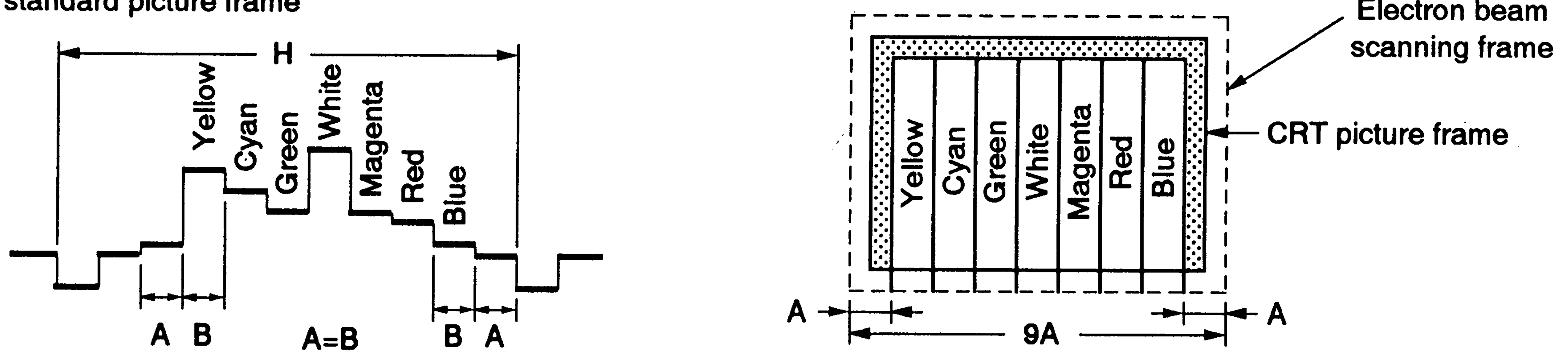


Fig. a (Pin ③ of CN301 (VC-55 board), Output waveform)

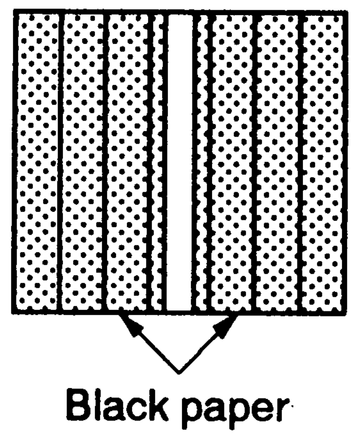
Fig. b (Picture on monitor TV)

Adjust the zooming and direction of the camera to obtain the output waveform shown in Fig. a and the monitor TV picture shown in Fig. b.

Fig. 7-4.

5) High luminance pattern
   Create the high luminance pattern as shown in Fig. 7-5, and adjust the picture frame shown in Fig. 7-6.

High luminance pattern



Attach black paper over all sections of the pattern except for half of the white bar of the color bar chartt. Display the picture on the monitor with the standard picture frame.

Fig. 7-5.

High luminance pattern

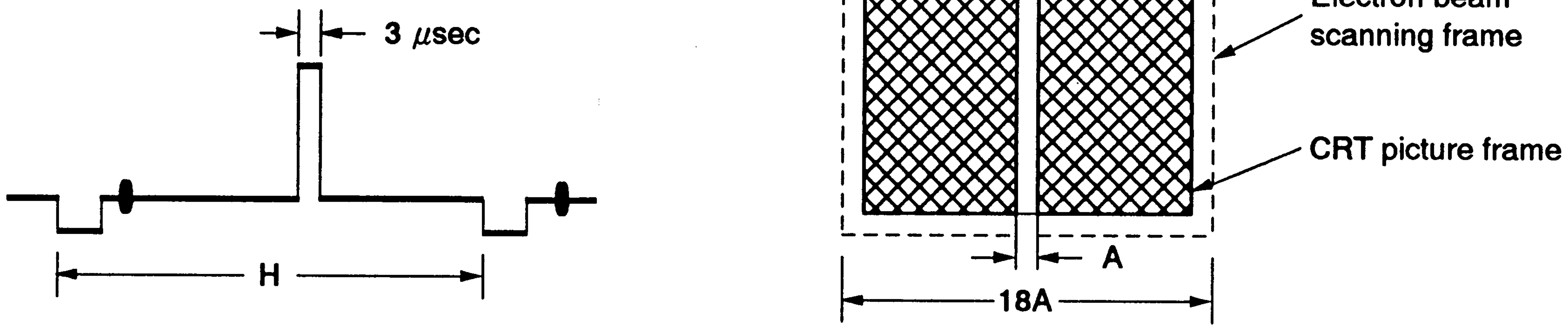


Fig. a (Pin ③ of CN301 (VC-55 board), Output waveform)

Fig. b (Picture on monitor TV)

Adjust the zooming and direction of the camera to obtain the output waveform shown in Fig. a and the monitor TV picture shown in Fig. b.

Fig. 7-6.

7-1-4. Adjustment Remote Controller

An EVR (electronic variable resistor) is used as the adjustment element for the camera block, replacing the conventional semi-fixed resistor. The EVR is controlled by the EVR/AWB microprocessor (IC301 on VC-55 board). This microprocessor reads the data written in the nonvolatile memory of the microprocessor and sends it to the EVR. The EVR D-A-converts this data (8 bits for each adjustment point) and creates the adjustment voltage.

Thus, it is necessary to change the adjustment data written in the nonvolatile memory when adjusting the camera block, and the adjustment remote controller is used for this purpose.

The adjustment remote controller performs bidirectional communications with the camera block microprocessor using the remote control signal lines (LANC). Adjustment addresses and adjustment data up/down commands are sent to the camera block microprocessor from the adjustment remote controller. Adjustment addresses and adjustment data are sent from the camera block microprocessor to the adjustment remote controller.

1. Use of adjustment remote controller

Solder a lead wire or the like to Pin (B6) (refer to 7-1-5.) of the check point array on the VC-55 board.

1) Connect the adjustment remote controller to the remote terminal (J813 on JV-6 board). (Set HOLD switch of the adjustment remote controller to the HOLD position (SERVICE position).)
2) Turn on the power of the main unit.
3) Connect Pin (B6) ($\overline{\text{CAM ADJ}}$) of the check point array to GND using a jumper wire.
   (This connection causes the EVR/AWB microprocessor to cease normal remote control operation and to begin adjustment exclusive communications.)
   Note: Be sure to make this connection only after turning on the power. The following will be displayed on the LCD of the adjustment remote controller if the connection is normal. (Adjustment data varies according to the unit.)

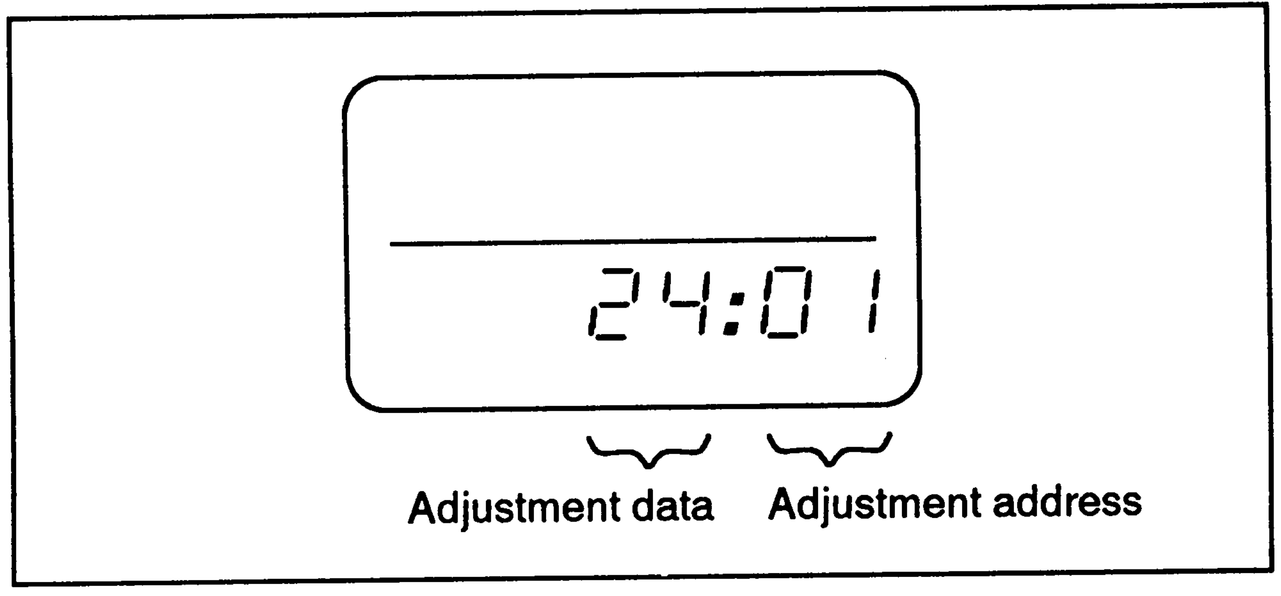


Fig. 7-7.

4) Designates the desired adjustment address using the adjustment remote controller. The adjustment address is incremented by pressing FF (▶▶) button and decremented by pressing REW (◀◀) button. (The adjustment address is indicated in decimal, and there are 89 addresses from 01 to 89. The adjustment address corresponds to the EVR (IC305 on VC-55 board, IC003 on CP-20 board, IC454 on AF-47 board) output terminals. Refer to Table 7-3. for the adjustment contents of the various addresses.)
5) Perform adjustment by incrementing or decrementing the adjustment data.
   The adjustment data is incremented by pressing PLAY (▶) button. The adjustment data is decremented by pressing STOP (■) button.
   - The adjustment address is indicated in hexadecimal. There are 256 values from 00 to FF.

Hexadecimal	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Indication	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal equivalent	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 7-1.

- The adjustment data corresponds to the EVR (IC305 on VC-55 board, IC003 on CP-20 board, IC454 on AF-47 board) output voltage, and is as follows.

Adjustment data ( ) is decimal equivalent	**EVR output voltage**
FF (=255)	Maximum value (approx. 5 Vdc)
F0 (=240)	↑
E0 (=224)	
D0 (=208)	
C0 (=192)	
B0 (=176)	
A0 (=160)	
90 (=144)	
80 (=128)	Center value (approx. 2.5 Vdc)
70 (=112)	
60 (=96)	
50 (=80)	
40 (=64)	
30 (=48)	
20 (=32)	
10 (=16)	↓
00 (=0)	Minimum value (approx. 0 Vdc)

Table 7-2.

6) The adjustment address is changed using FF (▶▶) button or REW (◀◀) button to store the adjustment data in the nonvolatile memory of EVR/AWB microprocessor (IC301 on VC-55 board).
   (The new adjustment data is not stored in the nonvolatile memory unless this operation is performed.)
7) There is the function that the last error (last memory emergency) occurred during using the unit can be stored even if the power is turned off. The emergency also cleared by COUNTER RESET button.

2. Precautions on use of adjustment remote controller

In order to prevent the correct adjustment data from erasure due to miss operation of adjustment remote controller, we recommend to take all adjustment data down before adjustment and record the new adjustment data after completing each adjustment item.

3. Adjustment address table

Adjustment Address	Adjustment Voltage Output Terminal	Adjustment Item	Remarks	Adjustment Data Memo Column
01	Pin ⑱ of IC003 (CP-20 board)	DELTA R	Auto white balance adjustment	
02	Pin ⑲ of IC003 (CP-20 board)	DELTA B		
03	Pin ② of IC003 (CP-20 board)	TITLE PEDESTAL		
04	Pin ③ of IC003 (CP-20 board)	C-PED	Fixed at "95"	95
05	Pin ④ of IC003 (CP-20 board)	R–Y GAIN	Color reproduction (gain) adjustment	
06	Pin ⑤ of IC003 (CP-20 board)	B–Y GAIN		
07	Pin ⑥ of IC003 (CP-20 board)	R–Y HUE	Color reproduction (hue) adjustment	
08	Pin ⑦ of IC003 (CP-20 board)	B–Y HUE		
09	Pin ⑧ of IC003 (CP-20 board)	TITLE A/D		
10	Pin ⑨ of IC003 (CP-20 board)	CHARACTER		
11	Pin ⑫ of IC003 (CP-20 board)	R GAIN	Pre-white balance adjustment	
12	Pin ⑬ of IC003 (CP-20 board)	B GAIN		
13	Pin ⑱ of IC305 (VC-55 board)	C1 GAIN	Chroma matrix adjustment	
14	Pin ⑲ of IC305 (VC-55 board)	Y1 GAIN	Y matrix adjustment	
15	Pin ② of IC305 (VC-55 board)	CHROMA LEVEL		
16	Pin ③ of IC305 (VC-55 board)	BURST LEVEL		
17	Pin ④ of IC305 (VC-55 board)	HUE CONT	Not used	
18	Pin ⑤ of IC305 (VC-55 board)	SYNC LEVEL		
19	Pin ⑥ of IC305 (VC-55 board)	SET UP		
20	Pin ⑦ of IC305 (VC-55 board)	WHITE CLIP		
21	Pin ⑧ of IC305 (VC-55 board)	Y LEVEL		
22	Pin ⑨ of IC305 (VC-55 board)	APERTURE		
23	Pin ⑫ of IC305 (VC-55 board)	YH LEVEL		
24	Pin ⑬ of IC305 (VC-55 board)	C2 GAIN		
25	Pin ⑱ of IC454 (AF-47 board)	IRIS		
26	Pin ⑲ of IC454 (AF-47 board)	FOCUS SPEED		
27	Pin ② of IC454 (AF-47 board)	HALL OFFSET		
28	Pin ③ of IC454 (AF-47 board)	MAX GAIN		
29	Pin ④ of IC454 (AF-47 board)	—		—
30	Pin ⑤ of IC454 (AF-47 board)	V SUB 1		
31	Pin ⑥ of IC454 (AF-47 board)	V SUB 2		
32	Pin ⑦ of IC454 (AF-47 board)	AGC		
33		—		—
34		—		—
35		—		—
36		—		—

Table 7-3. (1)

<table>
<tr><th>Adjustment Address</th><th>Adjustment Voltage Output Terminal</th><th>Adjustment Item</th><th>Remarks</th><th>Adjustment Data Memo Column</th></tr>
<tr><td>37</td><td></td><td>MODE</td><td>The following adjustment modes are selected by changing the adjustment data.
<table>
<tr><th>Adjustment data</th><th>Adjustment mode</th></tr>
<tr><td>00</td><td>Release</td></tr>
<tr><td>01</td><td>Focus hunting</td></tr>
<tr><td>03</td><td>Zoom position</td></tr>
<tr><td>05</td><td>HALL, IRIS CLOSE</td></tr>
<tr><td>07</td><td>HALL, IRIS OPEN</td></tr>
<tr><td>09</td><td>HALL IN/OUT threshold</td></tr>
<tr><td>0B</td><td>Auto-focus LLA</td></tr>
<tr><td>FD</td><td>Auto-focus filter fixed at FA</td></tr>
<tr><td>FF</td><td>Auto-focus filter fixed at FH</td></tr>
</table></td><td>00</td></tr>
<tr><td>38</td><td></td><td>LLA</td><td>Auto-focus LLA adjustment</td><td></td></tr>
<tr><td>39</td><td></td><td>MACRO</td><td></td><td></td></tr>
<tr><td>40</td><td></td><td>IN/OUT DOOR</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>41</td><td></td><td>LOW CONT</td><td rowspan="5">Auto-focus adjustment</td><td></td></tr>
<tr><td>42</td><td></td><td>FA-SM</td><td></td></tr>
<tr><td>43</td><td></td><td>FH-SM</td><td></td></tr>
<tr><td>44</td><td></td><td>FA-B</td><td></td></tr>
<tr><td>45</td><td></td><td>FH-B</td><td></td></tr>
<tr><td>46</td><td></td><td>———</td><td></td><td>———</td></tr>
<tr><td>47</td><td></td><td>GATE-H</td><td>Auto-focus adjustment</td><td></td></tr>
<tr><td>48</td><td></td><td>———</td><td></td><td>———</td></tr>
<tr><td>49</td><td></td><td>THR STEP</td><td>Auto-focus adjustment</td><td></td></tr>
<tr><td>50</td><td></td><td>———</td><td></td><td>———</td></tr>
<tr><td>51</td><td></td><td>BACK RUSH</td><td>Fixed at 02</td><td>02</td></tr>
<tr><td>52</td><td></td><td>FHW</td><td>Auto-focus adjustment</td><td></td></tr>
<tr><td>53</td><td></td><td>———</td><td></td><td>———</td></tr>
<tr><td>54</td><td></td><td>AGC W</td><td rowspan="2">Auto-focus adjustment</td><td></td></tr>
<tr><td>55</td><td></td><td>AGC B</td><td></td></tr>
<tr><td>56</td><td></td><td>BASE-H</td><td>Fixed at 18</td><td>18</td></tr>
<tr><td>57</td><td></td><td>IRIS IN</td><td rowspan="2">IRIS IN/OUT adjustment</td><td></td></tr>
<tr><td>58</td><td></td><td>IRIS OUT</td><td></td></tr>
<tr><td>59</td><td></td><td>START R</td><td>Preset R CONT data for reset start</td><td>30</td></tr>
<tr><td>60</td><td></td><td>START B</td><td>Preset B CONT data for reset start</td><td>41</td></tr>
<tr><td>61</td><td></td><td>BTM SLP R</td><td>Fixed at 23</td><td>23</td></tr>
<tr><td>62</td><td></td><td>BTM SLP B</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>63</td><td></td><td>MDL SLP R</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>64</td><td></td><td>MDL SLP B</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>65</td><td></td><td>TOP SLP R</td><td>Fixed at 10</td><td>10</td></tr>
<tr><td>66</td><td></td><td>TOP SLP B</td><td>Fixed at 01</td><td>01</td></tr>
</table>

Table 7-3. (2)

<table>
<tr><th>Adjustment Address</th><th>Adjustment Voltage Output Terminal</th><th>Adjustment Item</th><th>Remarks</th><th>Adjustment Data Memo Column</th></tr>
<tr><td>67</td><td></td><td>KEIKO R</td><td>Fixed at 41</td><td>41</td></tr>
<tr><td>68</td><td></td><td>KEIKO B</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>69</td><td></td><td>BTM UP</td><td>Fixed at 45</td><td>45</td></tr>
<tr><td>70</td><td></td><td>BTM DWN</td><td>Fixed at 33</td><td>33</td></tr>
<tr><td>71</td><td></td><td>MDL UP</td><td>Fixed at 7C</td><td>7C</td></tr>
<tr><td>72</td><td></td><td>MDL DWN</td><td>Fixed at 69</td><td>69</td></tr>
<tr><td>73</td><td></td><td>TOP UP</td><td>Fixed at 8F</td><td>8F</td></tr>
<tr><td>74</td><td></td><td>TOP DWN</td><td>Fixed at 6C</td><td>6C</td></tr>
<tr><td>75</td><td></td><td>KEIKO DWN</td><td>Fixed at 9E</td><td>9E</td></tr>
<tr><td>76</td><td></td><td>R DWN LMT</td><td rowspan="4">Auto white balance adjustment</td><td></td></tr>
<tr><td>77</td><td></td><td>B UP LMT</td><td></td></tr>
<tr><td>78</td><td></td><td>R OUT LMT</td><td></td></tr>
<tr><td>79</td><td></td><td>B OUT LMT</td><td></td></tr>
<tr><td>80</td><td></td><td>R OUTDOOR</td><td rowspan="2">Auto white balance adjustment</td><td></td></tr>
<tr><td>81</td><td></td><td>B OUTDOOR</td><td></td></tr>
<tr><td>82</td><td></td><td>RESET TM</td><td>Fixed at 3C</td><td>3C</td></tr>
<tr><td>83</td><td></td><td>DELAY TM</td><td>Auto white balance tracking speed.
Fixed at 10</td><td>10</td></tr>
<tr><td>84</td><td></td><td>FAST TM</td><td>Fixed at 20</td><td>20</td></tr>
<tr><td>85</td><td></td><td>CAM DDS 0</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>86</td><td></td><td>CAM DDS 1</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>87</td><td></td><td>CAM DDS 2</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>88</td><td></td><td>CAM ALN</td><td>Fixed at 00</td><td>00</td></tr>
<tr><td>89</td><td></td><td>AWB mode</td><td>The following auto white balance adjustment modes are selected by changing the adjustment data.
<table>
<tr><th>Adjustment data</th><th>Adjustment mode</th></tr>
<tr><td>00</td><td>Release, initial setting</td></tr>
<tr><td>10</td><td>Auto white balance value output
(within tracking zone)</td></tr>
<tr><td>E0</td><td>Auto white balance adjustment possible</td></tr>
<tr><td>F0</td><td>Auto white balance tracking zone evaluation invalid</td></tr>
</table></td><td>00</td></tr>
</table>

Table 7-3. (3)

7-1-5. Check Point Array

Almost all of the measurement points for camera block adjustment are located in the check point array on the VC-55 board. Solder short lead wires onto the terminals needed for adjustment and connect an oscilloscope, etc. The terminal numbers and signal names for the check point array are shown in Table 7-4.

Pin No.	Signal Name	Pin No.	Signal Name
A1	G OUT	B1	ID
A2	N.C	B2	N.C
A3	N.C	B3	Y (LPF) OUT
A4	Y0	B4	V SUB
A5	Y1	B5	AW ADJ
A6	C0	B6	$\overline{\text{CAM ADJ}}$
A7	C1	B7	MODE
A8	N.C	B8	N.C
A9	YH	B9	SHUTTER EN
A10	N.C	B10	GND
A11	N.C	B11	CCD OUT

* N.C. ......no connection

Table 7-4.

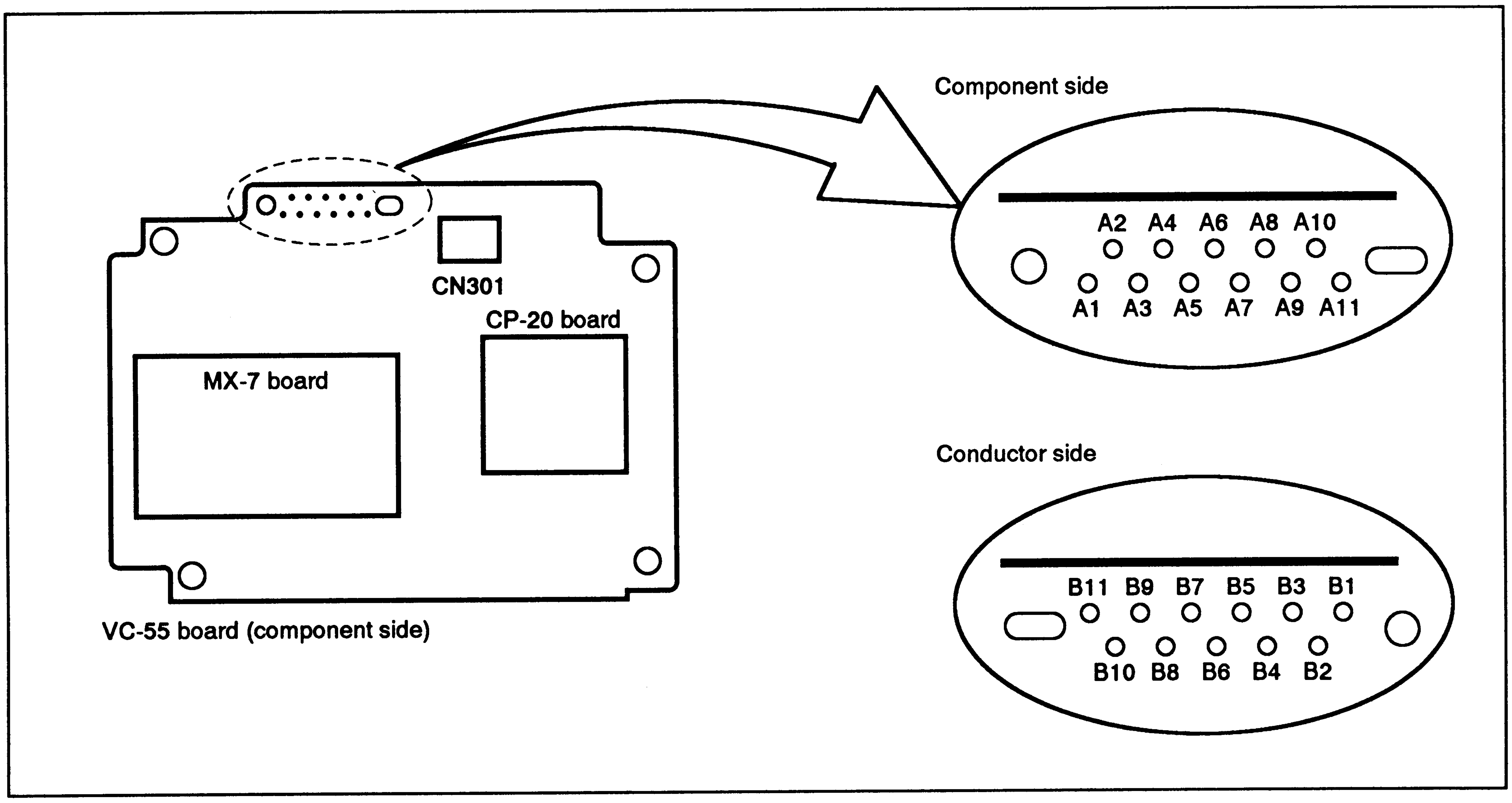

Component side
A2 A4 A6 A8 A10
A1 A3 A5 A7 A9 A11
CN301
CP-20 board
MX-7 board
VC-55 board (component side)
Conductor side
B11 B9 B7 B5 B3 B1
B10 B8 B6 B4 B2

Fig. 7-8.

7-1-6. AF Microcomputer Data Reading Jig

The AF microprocessor data reading jig converts the serial data (output data varies according to hall (iris) state, focus state, focus motor speed, zoom ring position, etc.) for adjustment output from the AF microprocessor (IC452 on AF-47 board) into a 2-digit hexadecimal code and displays it on the LED.

[Connections]

Connect as shown in the diagram below.

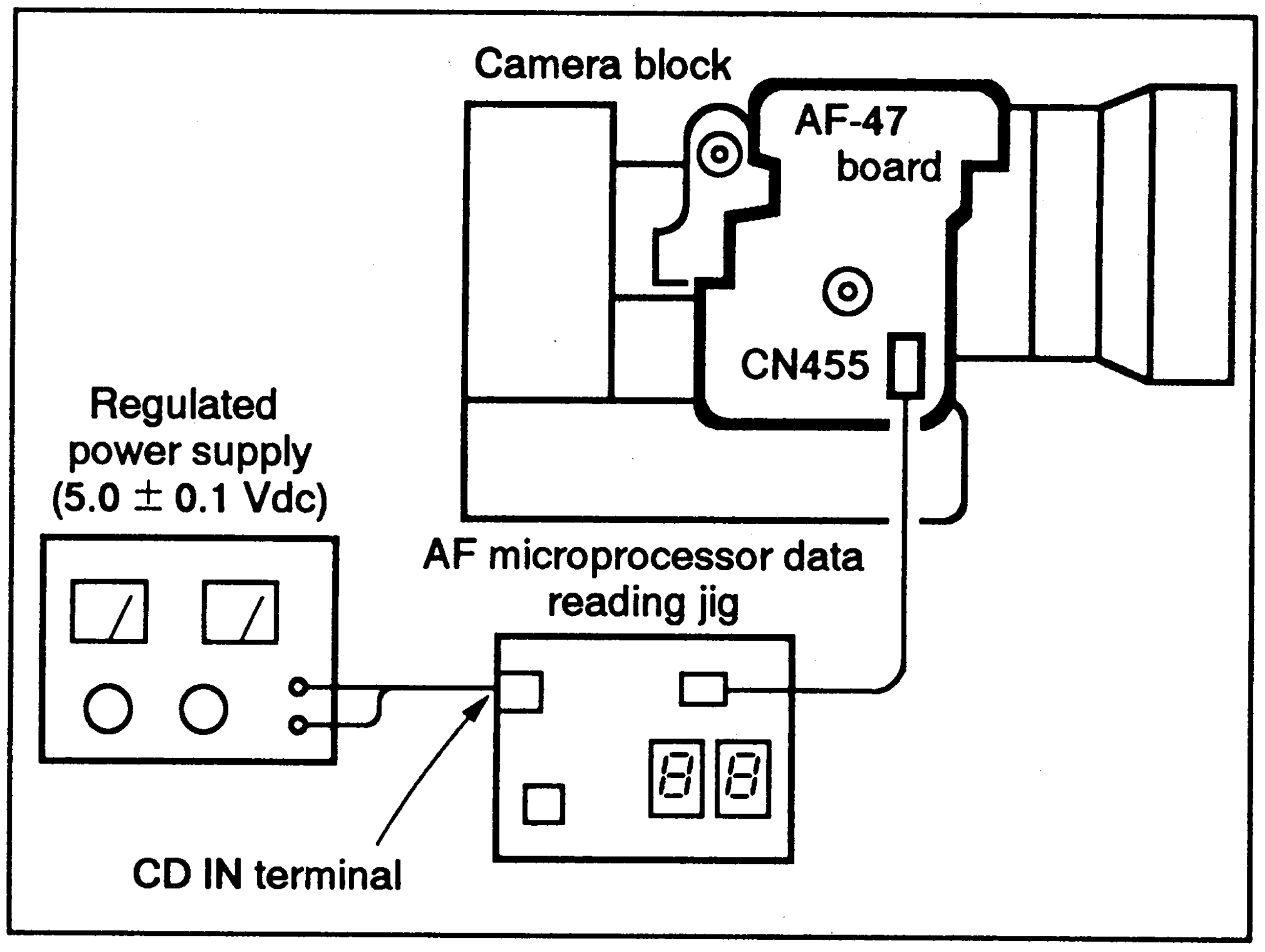

Camera block
AF-47 board
CN455
Regulated power supply (5.0 ± 0.1 Vdc)
AF microprocessor data reading jig
CD IN terminal

Fig. 7-9.

7-1-7. Data Processing

For some of the adjustment items, calculation from the data (hexadecimal) indicated on the AF microprocessor data reading jig and adjustment remote controller is needed to obtain the adjustment data. In these cases, convert the hexadecimal values to decimal once before calculation and reconvert the result to hexadecimal to obtain the adjustment data. A hexadecimal-decimal conversion table is shown in Table 7-5.

Hexadecimal-Decimal Conversion Table

Hexadecimal lower digit / Hexadecimal upper digit	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	② D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A(A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① → B(b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C(c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D(d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E(E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F(F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: ( ) is the indication on the jig or adjustment remote controller.

Example: In case the indication on the jig or adjustment remote controller is BD (b d).
As the upper digit of hexadecimal is B (b) and the lower digit is D (d), the decimal value is obtained from the intersection "189" of ① and ② in the above table.

Table 7-5.

7-2. CAMERA SYSTEM ADJUSTMENT

7-2-1. Flange Back Adjustment

Subject	Siemens star (2m directly in front of lens reference surface (“ ϕ ” mark))
Measurement Point	Check with a monitor TV
Measuring Instrument	
Adjusting Element	Flange back adjusting pin
Tools	Phillips screwdriver, slotted screwdriver

Adjusting method:

1) Set FOCUS switch (S206 on FD-13 board) to the MANUAL mode.
2) Position a Siemens star 2 m directly in front of the lens reference plane (See Fig. 7-2.).
3) Adjust the camera block position to match the center of the Siemens star imaged on the monitor TV screen coincide with the monitor screen center.
4) Check to assure the smooth motion of the lens zoom lever to both its WIDE-end position (11 mm) and TELE-end position (88 mm), and then set it at its WIDE-end position. (In this process, also check the monitor image to assure proper zooming operation.)
5) Adjust IRIS control (RV201 on FD-13 board) to set the lens to full aperture. At this time, adjust the illumination on the Siemens star or place an ND filter over the lens, and confirm that the proper image is displayed on the monitor TV screen.
6) Set the lens focus index at the center of “2”.

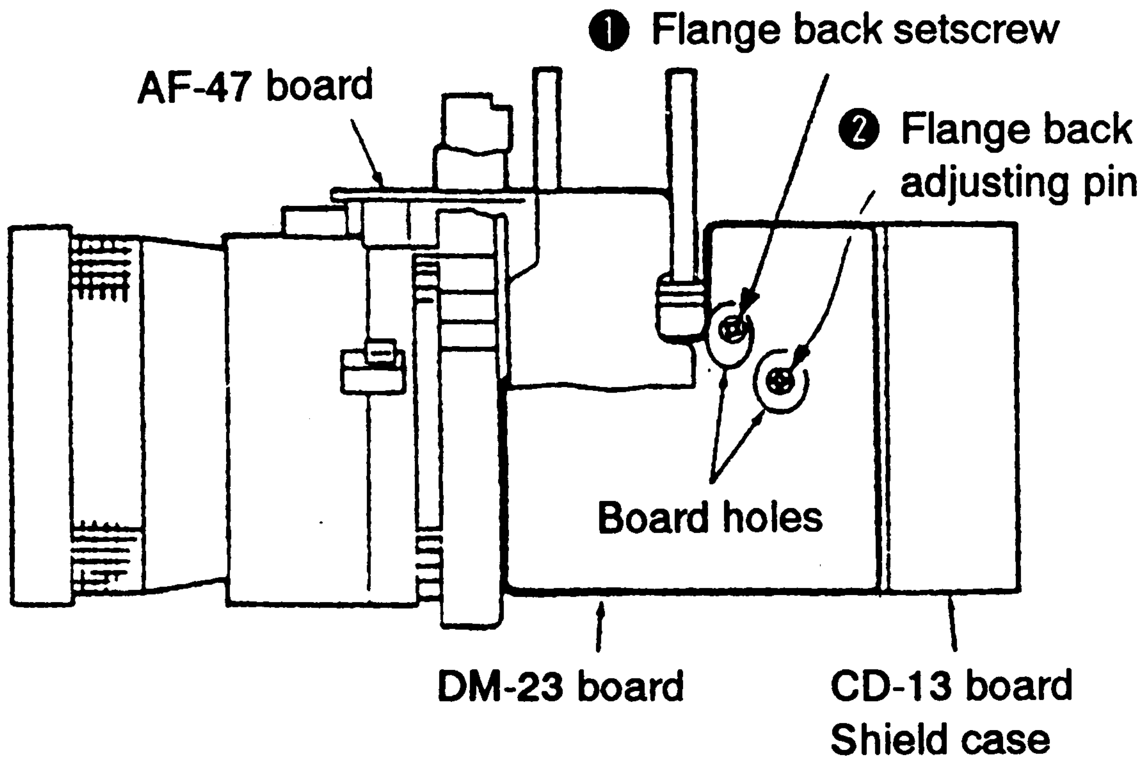

❶ Flange back setscrew
AF-47 board
❷ Flange back adjusting pin
Board holes
DM-23 board
CD-13 board
Shield case

Fig. 7-10.

7) Loosen flange back setscrew ❶ with a Phillips screwdriver. (See Fig. 7-10.)
8) By turning the flange back adjusting pin ❷ while watching the monitor screen, attain the optimum definition of a wedge at the Siemens star center on the screen. (Turn it a few times to the left and right to ensure optimum definition.)
   Note: Do not turn the adjusting pin excessively in either direction.
9) While holding the flange back adjusting Pin ❷ to prevent further rotation, tighten the flange back setscrew ❶.
10) With the zoom lever fixed at its WIDE-end position, turn the focus ring and set it to the position that provides the best focus of the wedge. Check to assure the focusing index position is within the range shown in Fig. 7-11. Also, rotate the focus ring to the close (1.1m) and far (∞) extremes and confirm that the wedge is no longer in focus at their position.

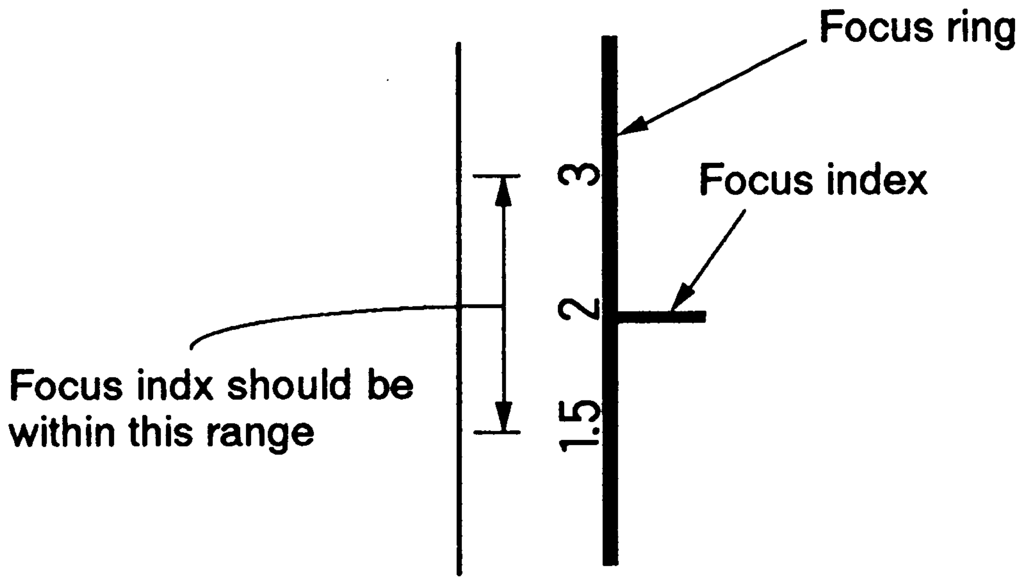

Focus ring
Focus index
3
2
1.5
Focus indx should be within this range

Fig. 7-11.

11) Fix the zoom lever at its TELE-end position.
12) Turn the focus ring and stop at the position that provides the best focus of the wedge.
    Confirm that the focus index is within ± 1.5 mm of center of “2”.

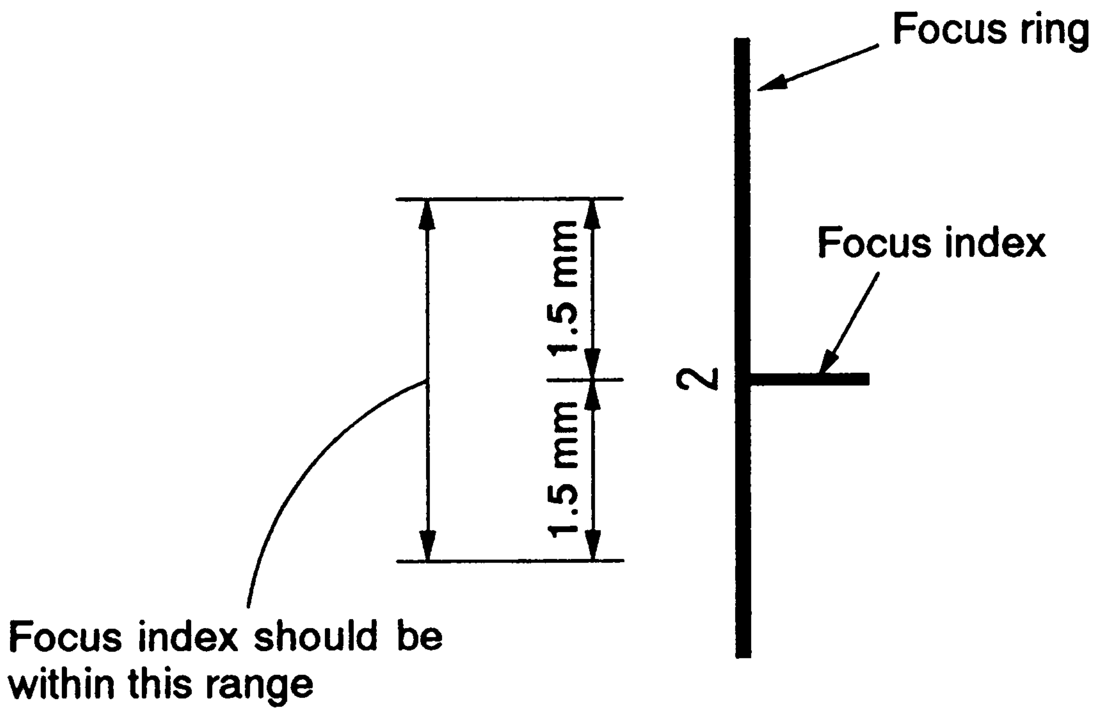

Focus ring
Focus index
1.5 mm
1.5 mm
2
Focus index should be within this range

Fig. 7-12.

7-2-2. Power Supply Check (DC-DC Converter)

Measuring Instrument	Digital voltmeter
CAM 5V check	
Measurement Point	Pin ⑥ of CN013
Specified Value	4.9 ± 0.15 Vdc
CAM 4V check	
Measurement Point	Pin ② of CN013
Specified Value	6.6 ± 0.33 Vdc
CAM 15V check	
Measurement Point	Pin ③ of CN013
Specified Value	15.0 ± 0.45 Vdc
CAM 30V check	
Measurement Point	Pin ⑤ of CN013
Specified Value	26.0 ± 1.6 Vdc

Checking method:

1) Each power supply voltage should be at its specified level.

7-2-3. EVR Initial Settings

Set to the following initial settings of the adjustment data only when the EVR/AWB microprocessor (IC301 on VC-55 board) was replaced.

(The microprocessor data stored before replacement is also available.)

Adjustment Address	Adjustment Data Initial Value	Adjustment Address	Adjustment Data Initial Value	Adjustment Address	Adjustment Data Initial Value
01 (DELTA R)	30~70	51 (BACK RUSH)	02	71 (MDL UP)	7C
02 (DELTA B)	30~70	56 (BASE-H)	18	72 (MDL DWN)	69
04 (C-PED)	95	59 (START R)	30	73 (TOP UP)	8F
20 (WHITE CLIP)	FF	60 (START B)	41	74 (TOP DWN)	6C
21 (Y LEVEL)	70	61 (BTM SLP R)	23	75 (KEIKO DWN)	9E
25 (IRIS)	68	62 (BTM SLP B)	00	76 (R DWN LMT)	
28 (MAX GAIN)	B0	63 (MDL SLP R)	00	78 (R OUT LMT)	
30 (V SUB 1)	80	64 (MDL SLP B)	00	82 (R TM)	3C
31 (V SUB 2)	80	65 (TOP SLP R)	10	83 (D TM)	10
32 (AGC)	FF	66 (TOP SLP B)	01	84 (F TM)	20
37 (MODE)	00	67 (KEIKO R)	41	88 (CAM ALN)	00
38 (LLA)	3F	68 (KEIKO B)	00	89 (AWB MODE)	00
39 (MACRO)	00	69 (BTM UP)	45		
40 (IN/OUT DOOR)	00	70 (BTM DWN)	33		

Table 7-6.

Adjusting method:

1) Set the adjustment data at the various adjustment addresses to the initial values using the adjustment remote controller.
2) Change the adjustment address to store the last adjustment data in the memory.

7-2-4. V SUB Adjustment (VC-55 Board)

Subject	Not needed
Measurement Point	Pin (B4) (V SUB) of check point array
Measuring Instrument	Digital voltmeter
Adjustment Address	30 (V SUB 1) 31 (V SUB 2)
Specified Value	(Voltage indicated by the imager) ± 0.1 Vdc

Note: Adjustment address 31 (V SUB 1) is used for rough adjustment and that of 31 (V SUB 2) for fine adjustment.

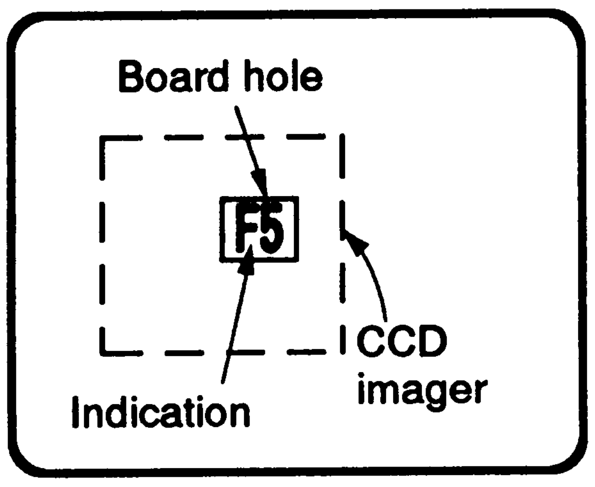
Adjusting method:

1) Change the adjustment data the adjustment addresses 30 and 31 using the adjustment remote controller to set the VSUB voltage (voltage indicated by the imager) to ± 0.1 Vdc.
2) Change the adjustment address to store the adjustment data in the memory.

Note: The VSUB specified voltage is expressed by two digits with the integer section abbreviation and decimal section by the imager.

Integer section abbreviation	Integer value
1	1
⋮	⋮
9	9
A	10
B	11
C	12
D	13
E	14
F	15
G	16
H	17
I	18
J	19
K	20
L	21

CD-13 board (conductor side)



(Example)
If F5 is indicated, the integer value is F→15 and decimal value is 5→0.5. Thus, the VSUB voltage becomes 15+0.5=15.5 (Vdc).

Fig. 7-13.

7-2-5. Hall Adjustment (DM-23 Board)

Subject	All black (cover lens with black cap)
Measurement Point	CN455 on AF-47 board
Measuring Instrument	AF microprocessor data reading jig
Adjusting Element	RV551 on DM-23 board
Adjustment Address	27 (Hall Offset)
Specified Value	When iris closed: Minimum value of 01 to 04 When iris open: 3D or 3E

Adjusting method:

1) Set RV551 to the mechanical center.
2) Set the adjustment address to 37 with the adjustment remote controller, and set the adjustment data to 05. (Setting when iris closed)
3) Change the adjustment address to 27.
4) Change the adjustment data until the indication on the AF microprocessor data reading jig is the minimum value in the range of 01 to 04. (Hall offset adjustment)
5) Change the adjustment address to 37 and set the adjustment data to 07. (Setting when iris open)
6) Adjust RV551 until the indication on the AF microprocessor data reading jig is either 3D or 3E. (3D is indicated as 3d.)
7) Repeat steps 2) through 6) until the specified values are satisfied.
8) Set the adjustment address to 37 and set the adjustment data to 00. (Releases the iris adjustment mode)
9) Change the adjustment address to store the adjustment data in the memory.

7-2-6. Iris Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Filter	ND filter 0.4 and 0.1
Measurement Point	Pin (B11) (CCD OUT) of check point array
Adjusting Instrument	Oscilloscope
Adjustment Address	25 (Iris)
Specified Value	420 ± 10 mVp-p

Adjusting method:

1) Set the adjustment address to 25 with the adjustment remote controller.
2) Without attaching an ND filter, change the adjustment data with the adjustment remote controller to set the IRIS OUT signal level to 420 ± 10 mVp-p.
3) Attach the ND filter 0.5 (0.4 ± 0.1) to the front of the lens and confirm that there is a smooth change in the signal level.
4) Remove the ND filter and confirm that the signal level is 420 ± 30 mVp-p.
5) Repeat 2) through 4) if the specified value is not satisfied.
6) Change the adjustment address to store the adjustment data in the memory.

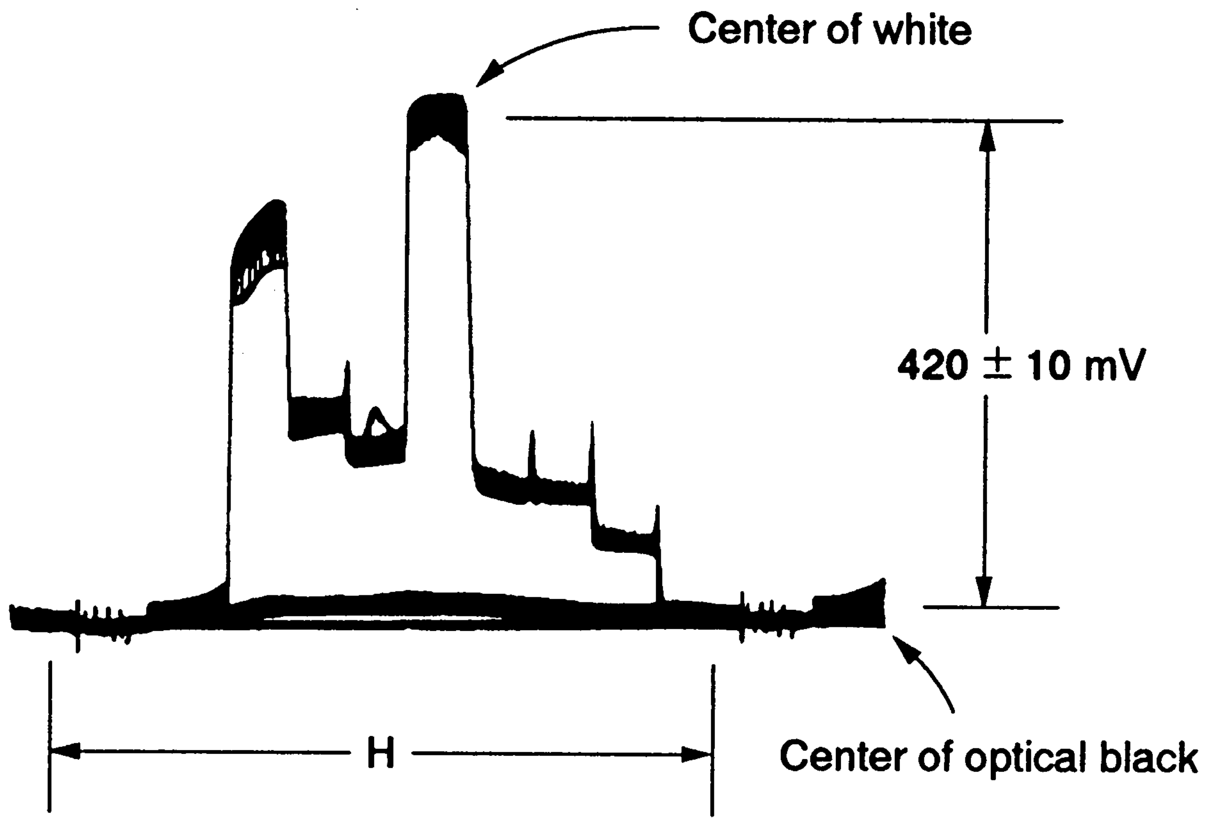


Fig. 7-14.

7-2-7. Iris In/Out Adjustment (AF-47 Board)

Subject	White pattern standard picture frame
Filter	ND filter 0.4 (two) and 0.1 (one)
Measurement Point	CN455
Measuring Instrument	AF microprocessor data reading jig
Adjustment Address	57 (Iris in) 58 (Iris out)

Adjusting method:

1) Cover the lens with the ND filter 0.8 (0.4+0.4).
2) Set the adjustment address to 37 with the adjustment remote controller and set the adjustment data to 09. (Hall in/out threshold mode setting)
3) Read the data indicated on the AF microprocessor data reading jig. This data will be a adjustment data and input it to the adjustment address 57.
4) Remove the ND filter 0.8 and replace it with ND filter 0.5 (0.4+0.1).
5) Read the data indicated on the AF microprocessor data reading jig. This data will be a adjustment data and input it to the adjustment address 58.
6) Change the adjustment address to 37 and set the adjustment data to 00. (Releases hall in/out threshold mode)
7) Change the adjustment address to store the adjustment data in the memory.

7-2-8. AGC Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (B3) (Y (LPF) OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	32 (AGC)
Specified Value	160 ± 5 mVp-p

Adjusting method:

1) Set the adjustment address to 32 with the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller to set the Y (LPF) signal level to 160 ± 5 mVp-p.
3) Change the adjustment address to store the adjustment data in the memory.

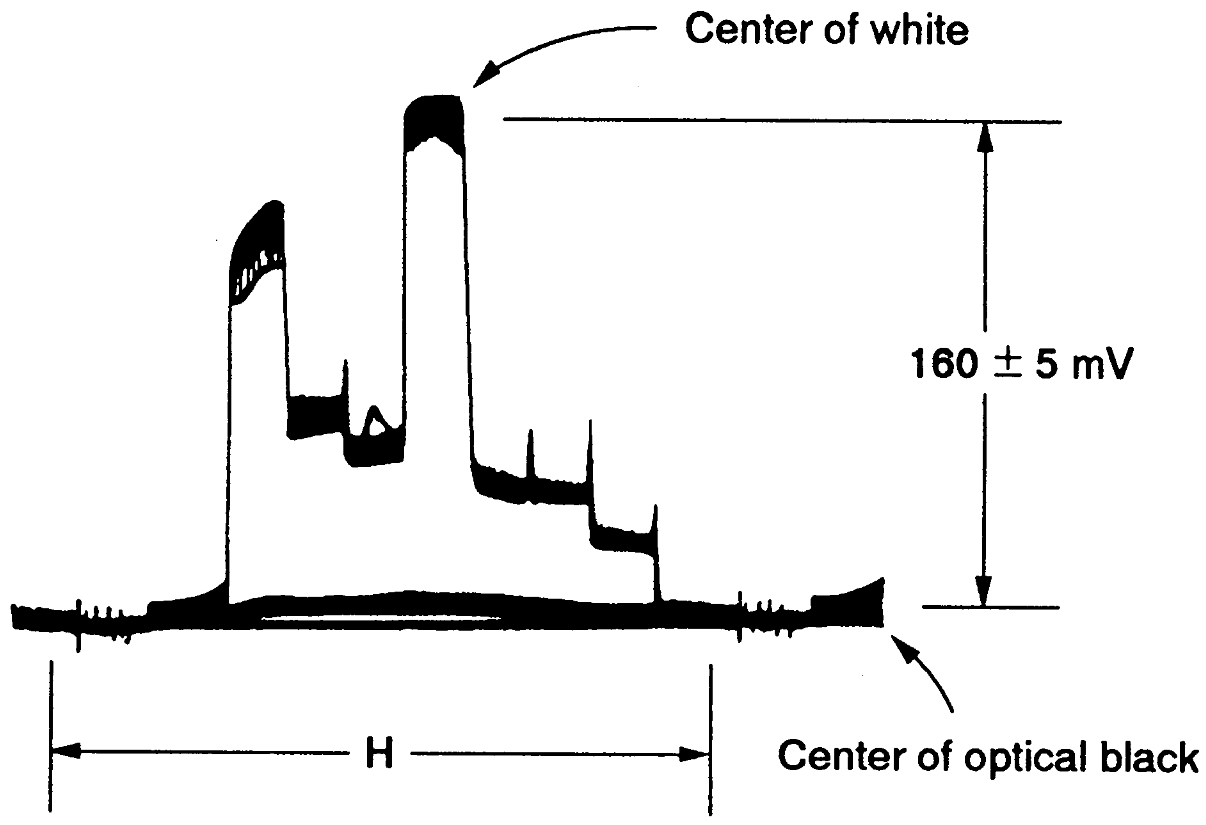


Fig. 7-15.

7-2-9. Y Signal Matrix Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	1: Pin A4 (Y0) of check point array 2: Pin A5 (Y1) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	14 (Y1 GAIN)
Specified Value	Y1 signal level=Y0 signal level

Adjusting method:

1) Connect the oscilloscope to Pin A4 of the check point array and measure the Y0 signal level.
2) Connect the oscilloscope to Pin A5 of the check point array. (Y1 signal level measurement)
3) Set the adjustment address to 14 using the adjustment remote controller.
4) Change the adjustment data until the Y1 signal level is the same as the Y0 signal level measured in 1).
5) Change the adjustment address to store the adjustment data in the memory.

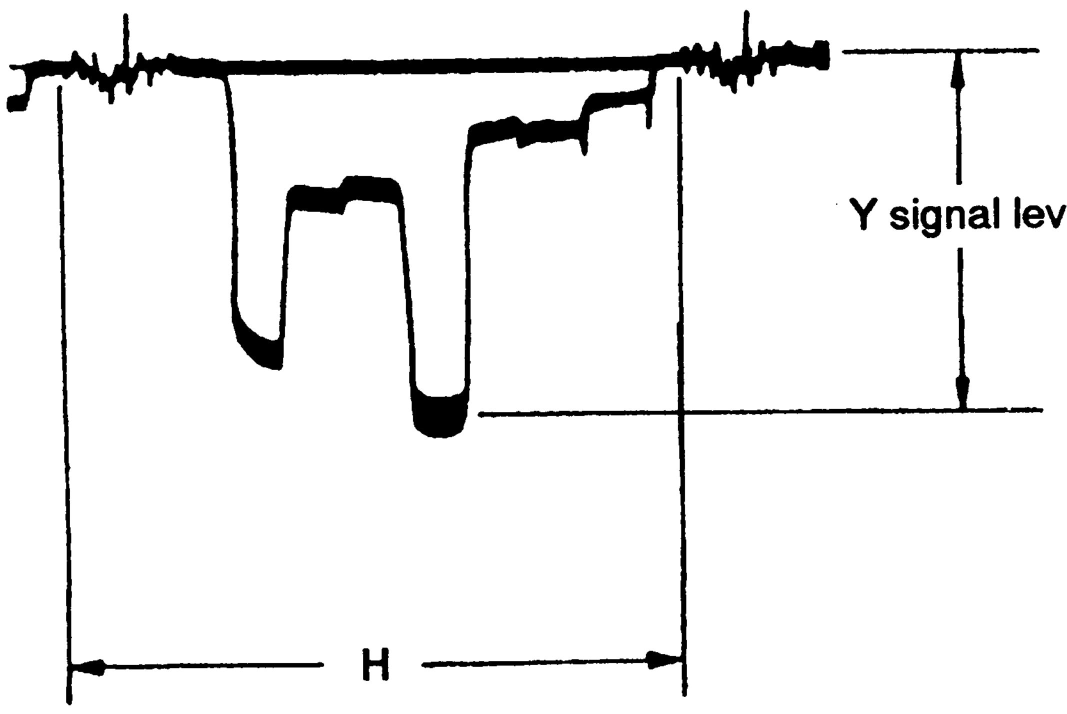


Fig. 7-16.

7-2-10. Chroma Signal Matrix Adjustment (1) (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	1: Pin A6 (C0) of check point array 2: Pin A7 (C1) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	13 (C1 GAIN)
Specified Value	C1 signal level=C0 signal level

Adjusting method:

1) Connect the oscilloscope to Pin A6 of the check point array and measure the C0 signal level. (The C0 signal level is the larger of the CR and CB signal levels.)
2) Connect the oscilloscope to Pin A7 of the check point array.
3) Set the adjustment address to 13 using the adjustment remote controller.
4) Change the adjustment data until the C1 signal level is the same as the C0 signal level measured in 1).
5) Change the adjustment address to store the adjustment data in the memory.

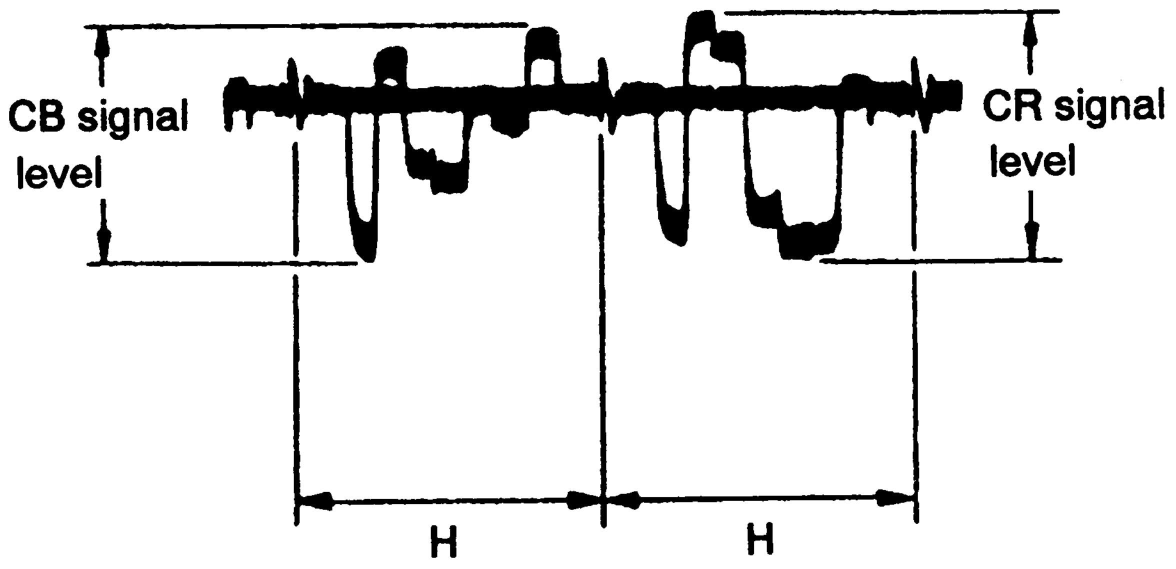


Fig. 7-17.

7-2-11. Chroma Signal Matrix Adjustment (2) (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	CH1 (X): Pin ㉔ of CP-20 board (B–Y) CH2 (Y): Pin ㉕ of CP-20 board (R–Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjustment Address	24 (C2 GAIN)
Specified Value	Separate color luminance points become one. (When using a vectorscope, follow as below.)

Note: Adjustment can be made in the same manner using a vectorscope.
(Vectorscope connection terminal: VIDEO OUT terminal of the video block)

Adjusting method:
1) Set the adjustment address to 24 using the adjustment remote controller.
2) Change the adjustment data so that the two separate color luminance points become one respectively.
3) Change the adjustment address to store the adjustment data in the memory.

Specification when using vectorscope:
specified value

Cyan, green	within 2.0 mm
Magenta	within 1.0 mm
Others	within 0.5 mm

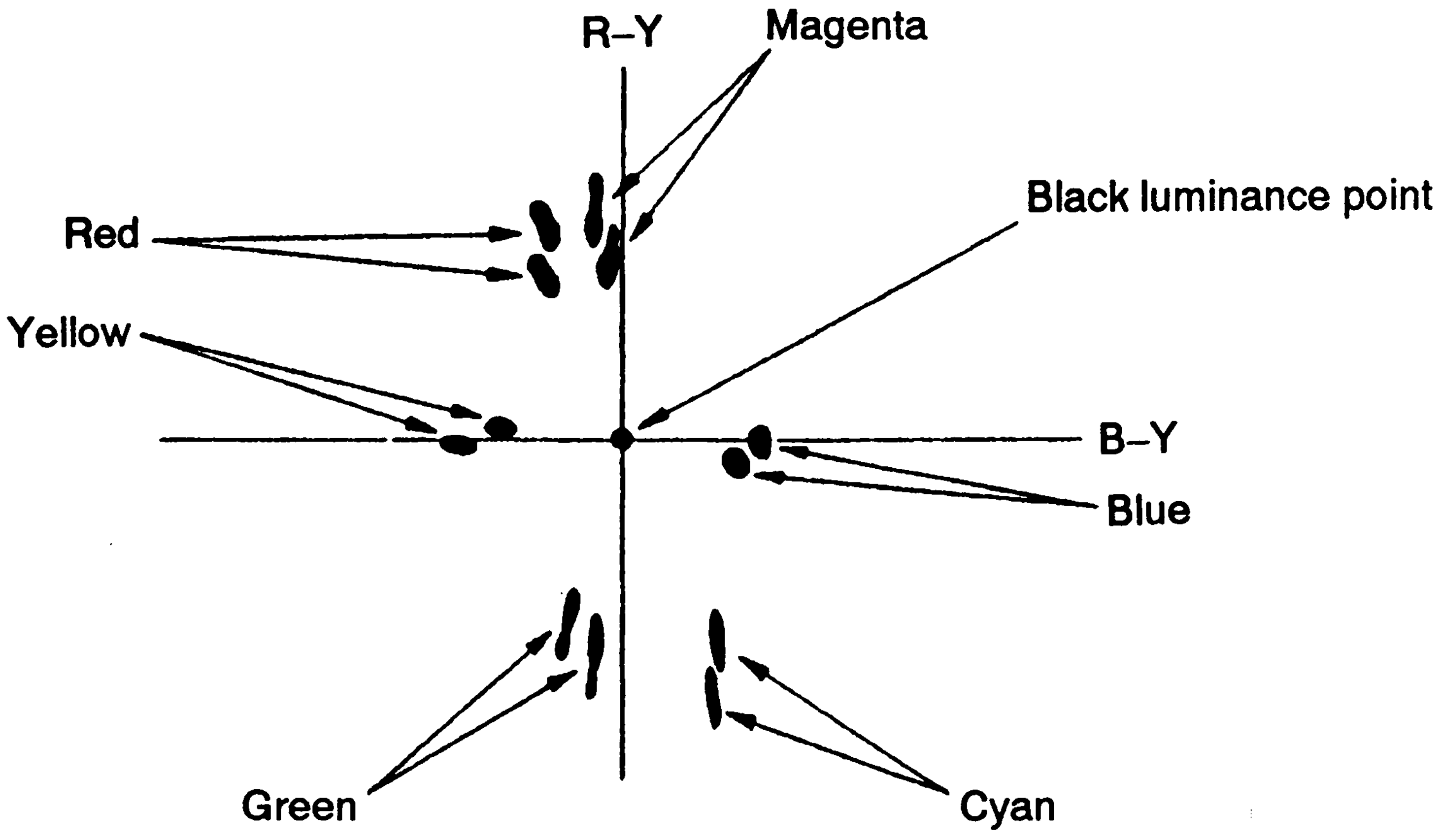


Fig. 7-18.

7-2-12. YH Level Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (A9) (YH) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	23 (Y GAIN)
Specified Value	900 ± 20 mV

Adjusting method:
1) Set the adjustment address to 23 with the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller to set the YH signal level to 900 ± 20 mV.
3) Change the adjustment address to store the adjustment data in the memory.

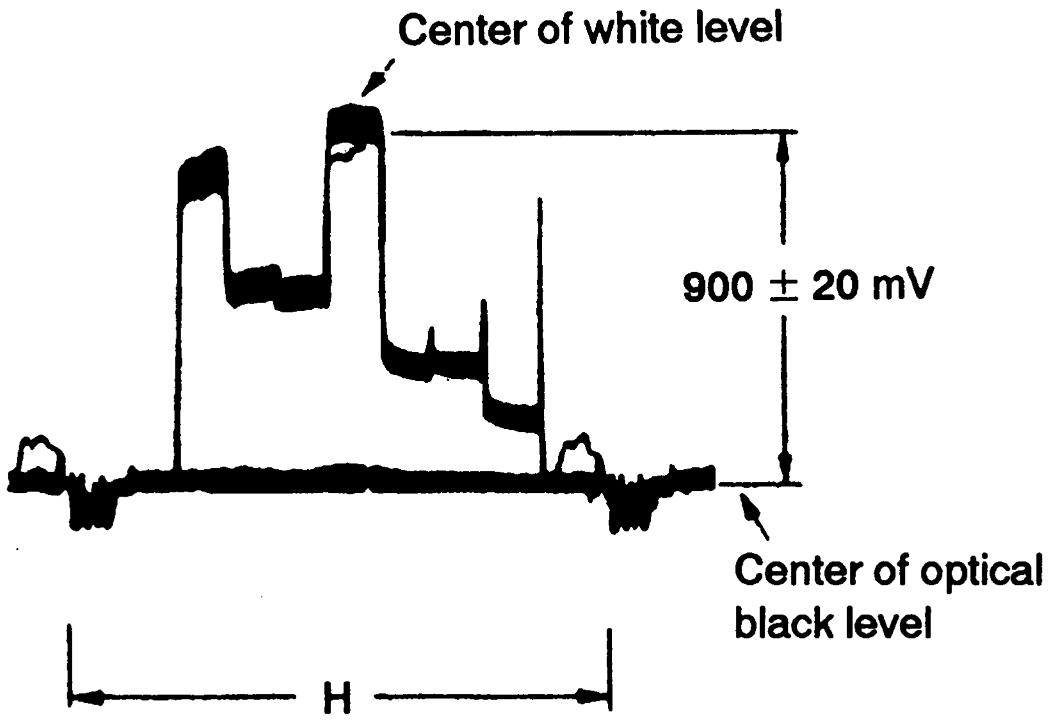


Fig. 7-19.

7-2-13. Chroma Level Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (A1) (G OUT) of check point array
Measuring Instrument	Oscilloscope
Adjustment Address	15 (C LEVEL)
Specified Value	320 ± 10 mV

Connection:

1) Connect Pin (B7) (MODE) of the check point array and GND with a jumper wire.

Adjusting method:

1) Set the adjustment address to 15 with the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller to set the G OUT signal level to 320 ± 10 mV.
3) Change the adjustment address to store the adjustment data in the memory.

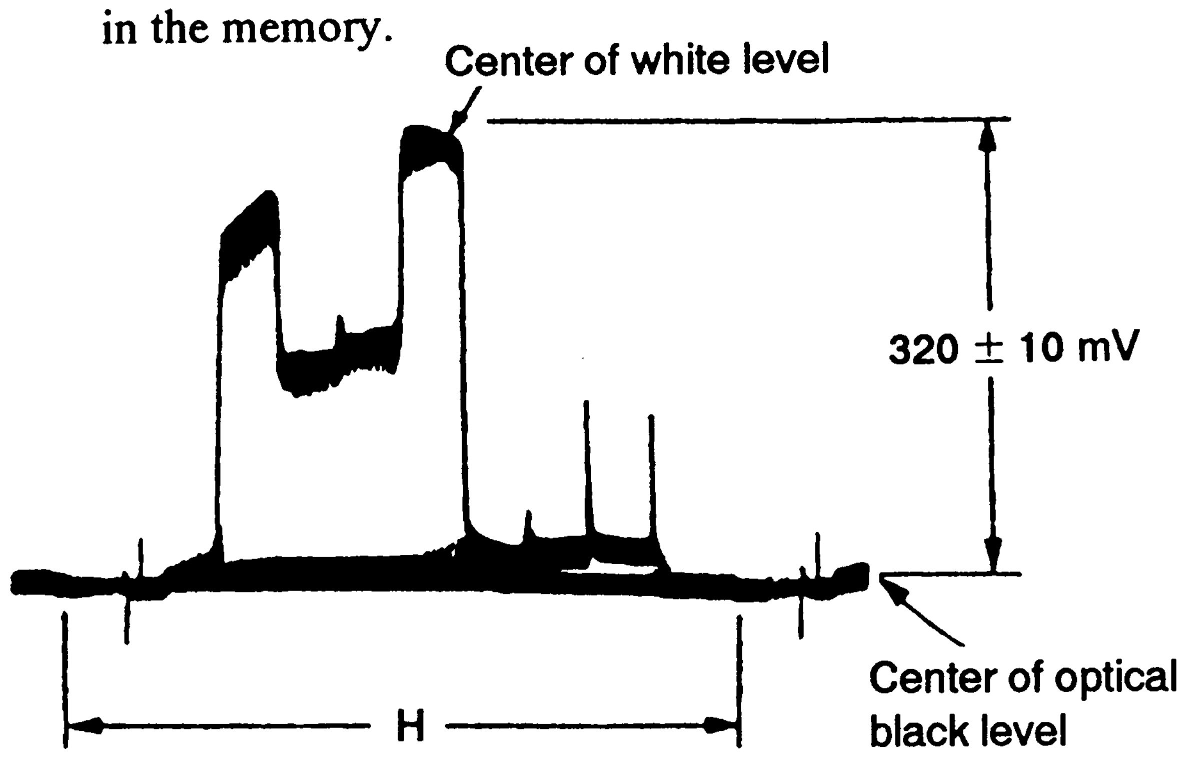


Fig. 7-20.

7-2-14. Sync Level Adjustment (VC-55 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin ③ (Y OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	18 (SYNC LEVEL)
Specified Value	285 ± 5 mVp-p

Adjusting method:

1) Set the adjustment address to 18 with the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller to set the sync level to 285 ± 5 mVp-p.
3) Change the adjustment address to store the adjustment data in the memory.

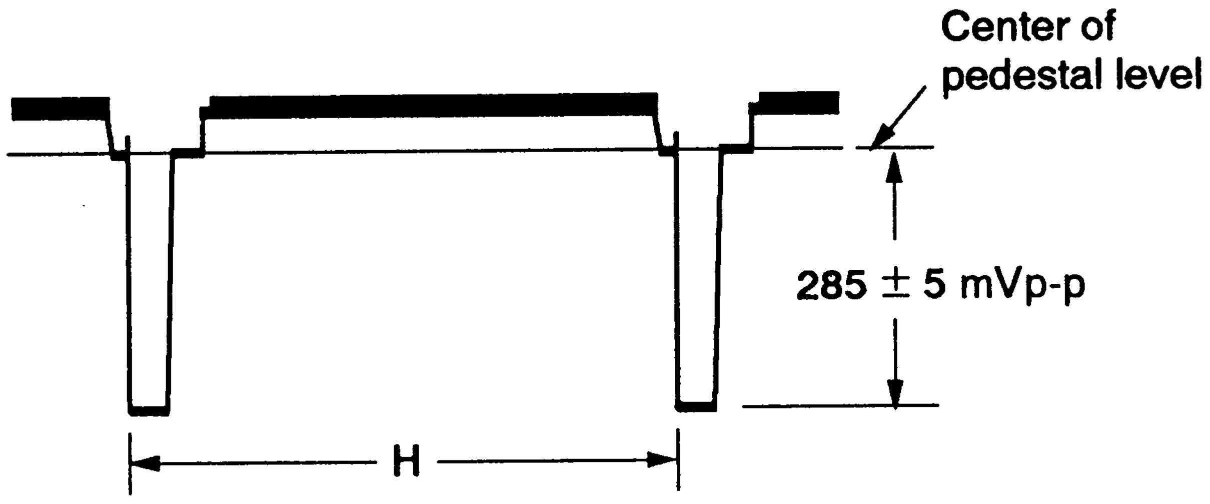


Fig. 7-21.

7-2-15. Setup Adjustment (VC-55 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin ③ (Y OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	19 (SET UP)
Specified Value	30 ± 10 mV

Adjusting method:

1) Set the adjustment address to 22 (APERTURE) with the adjustment remote controller, making a note of the adjustment data at this address. Then set the adjustment data to 00. (This is for noise reduction.)
2) Set the adjustment address to 19 with the adjustment remote controller.
3) Change the adjustment data with the adjustment remote controller to set the setup level to 30 ± 10 mV.
4) Set the adjustment address to 22 and reset the adjustment data to the value recorded in 1).
5) Change the adjustment address to store the adjustment data in the memory.

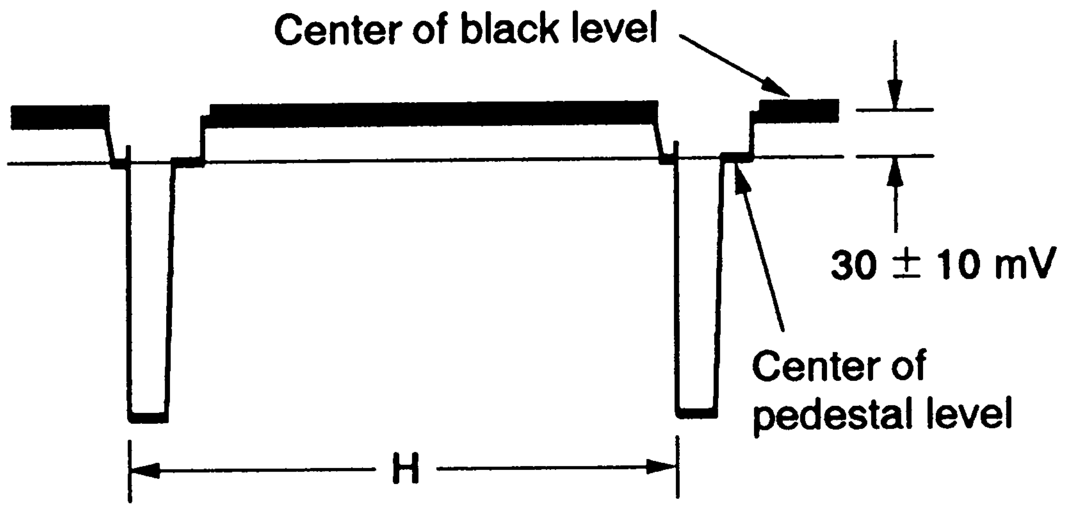


Fig. 7-22.

7-2-16. White Clip Adjustment (VC-55 Board)

Subject	High luminance pattern
Measurement Point	Pin ③ (Y OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	20 (WHITE CLIP)
Specified Value	840 ± 20 mV

Adjusting method:

1) Set the adjustment address to 21 (Y LEVEL) with the adjustment remote controller and the adjustment data to 70.
2) Set the adjustment address to 20 with the adjustment remote controller.
3) Change the adjustment data with the adjustment remote controller to set the white clip level to 840 ± 20 mV.
4) Change the adjustment address to store the adjustment data in the memory.
5) Perform "Y Level Adjustment".

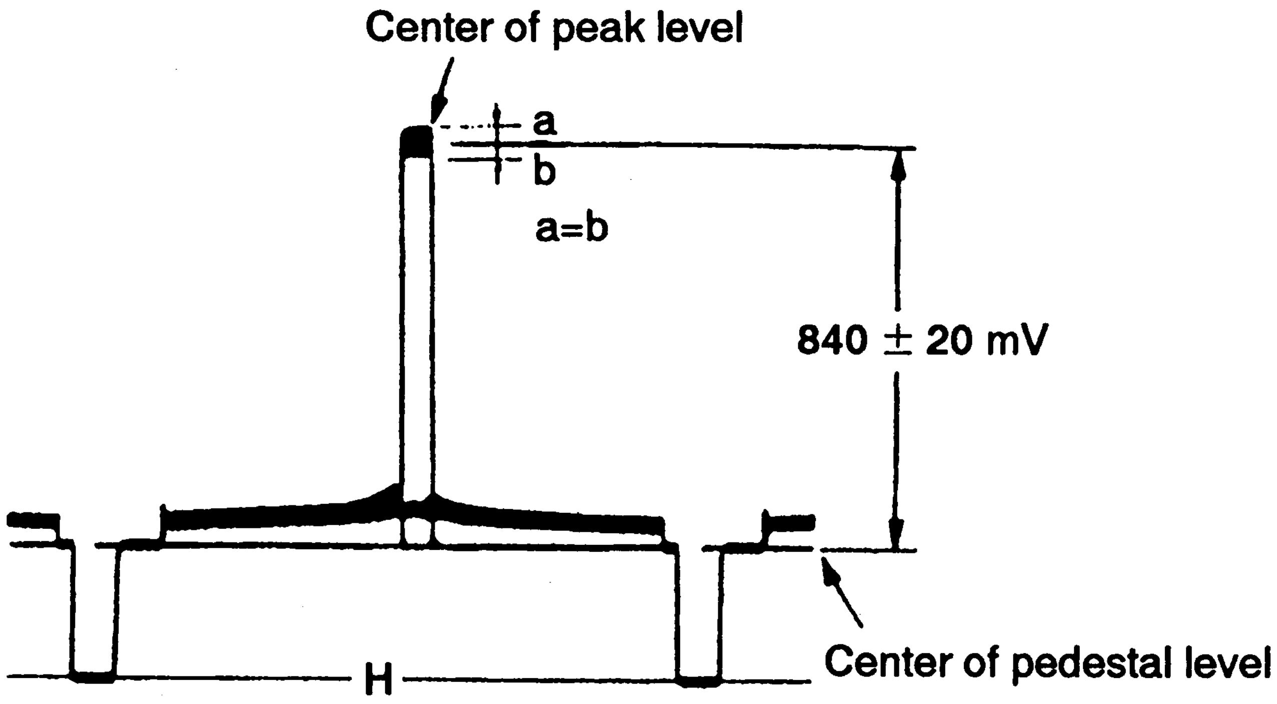


Fig. 7-23.

7-2-17. Y Level Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin ③ (Y OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	21 (Y LEVEL)
Specified Value	660 ± 10 mV

Adjusting method:

1) Confirm that "White Clip Adjustment" match with the specified value.
2) Set the adjustment address to 21 with the adjustment remote controller.
3) Change the adjustment data with the adjustment remote controller to set the Y signal level to 660 ± 10 mV.
4) Change the adjustment address to store the adjustment data in the memory.

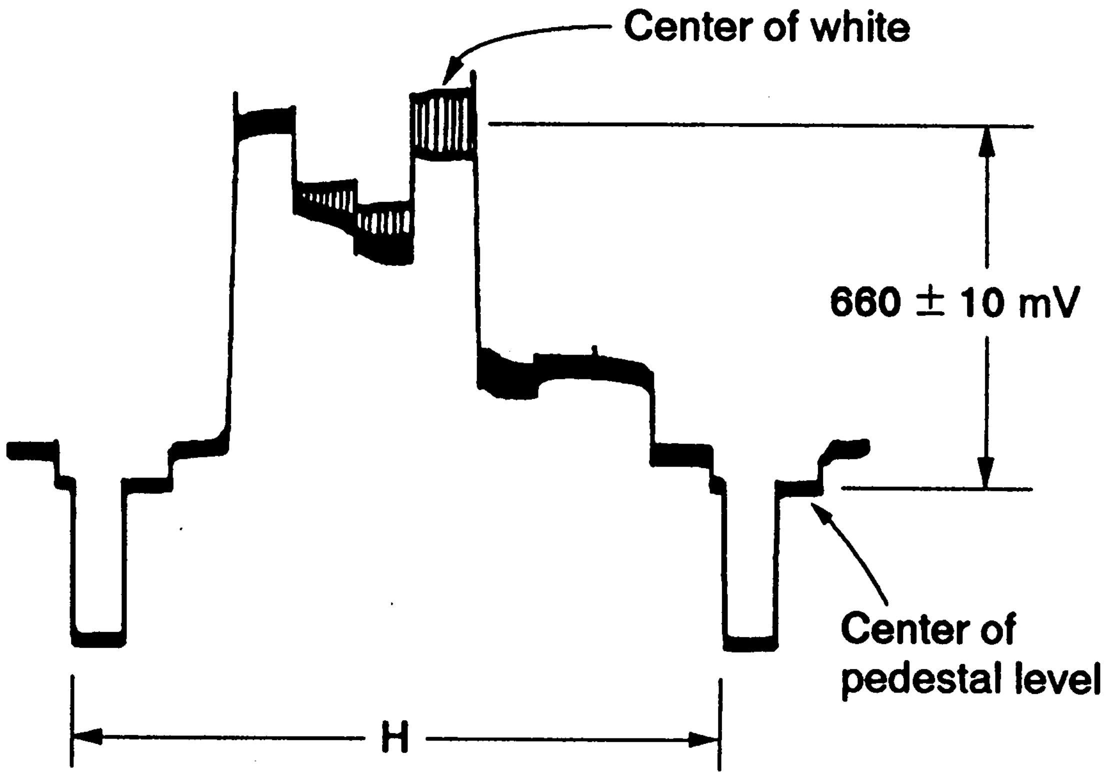


Fig. 7-24.

7-2-18. Aperture Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin ③ (Y OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	22 (APERTURE)
Specified Value	240 ± 10 mV

Adjusting method:

1) Turn the focus ring to set the aperture level (waveform peak) to maximum.
2) Set the adjustment address to 22 with the adjustment remote controller.
3) Change the adjustment data with the adjustment remote controller to set the aperture level (lower peak between green and white) to 240 ± 10 mV above the pedestal level.
4) Change the adjustment address to store the adjustment data in the memory.

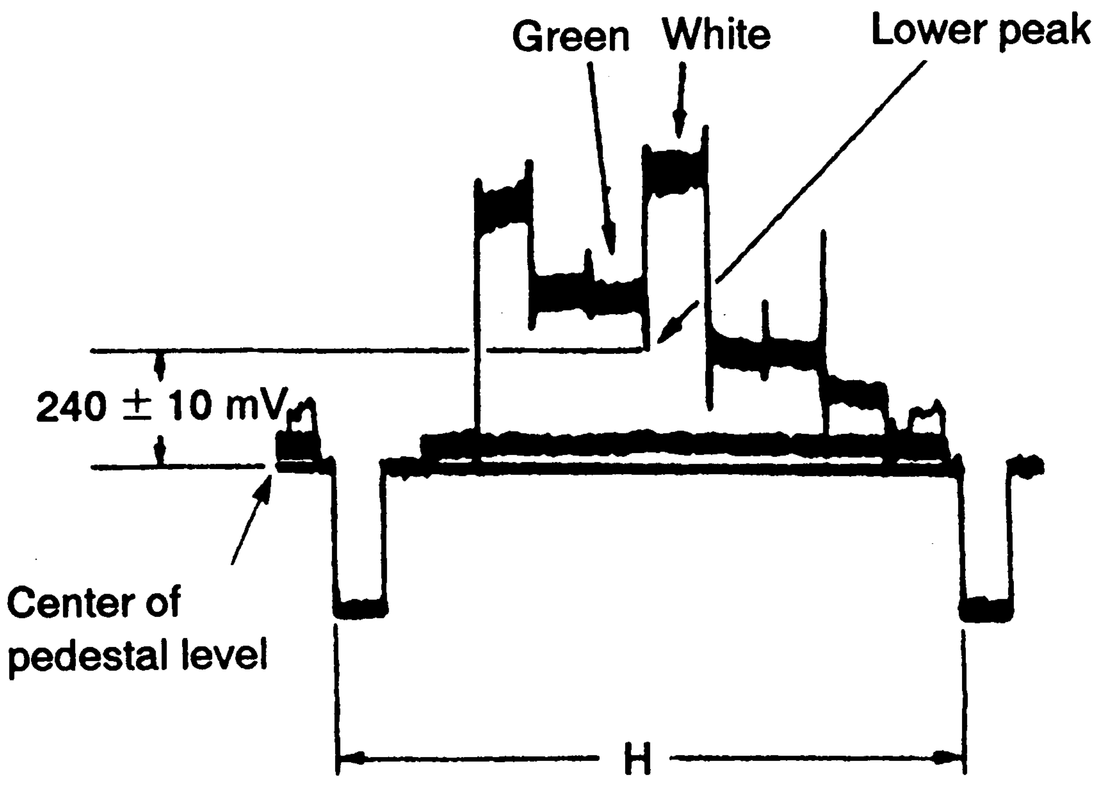


Fig. 7-25.

7-2-19. Max. Gain Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Filter	ND filters 1.0 (two) and 0.9 (one)
Measurement Point	Pin ③ (Y OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	28 (MAX GAIN)
Specified Value	340 ± 10 mV

Adjusting method:

1) Cover the lens with the ND filter 2.9 (1.0+1.0+0.9).
2) Set the adjustment address to 28 with the adjustment remote controller.
3) Change the adjustment data with the adjustment remote controller to set the Y signal level to 340 ± 10 mV.
4) Change the adjustment address to store the adjustment data in the memory.

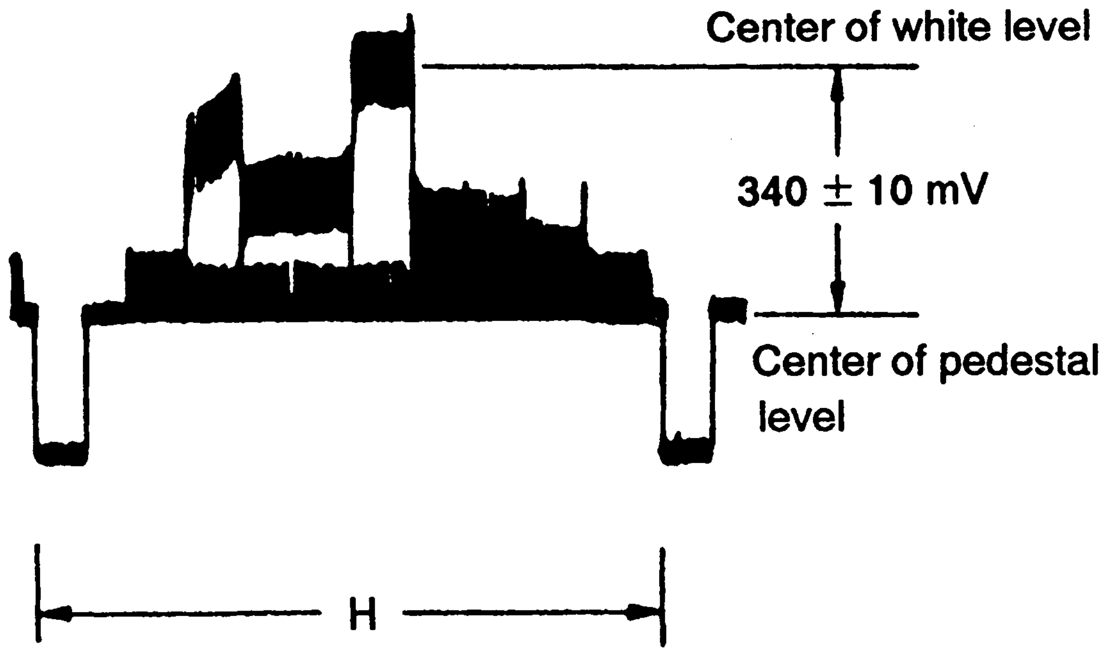


Fig. 7-26.

7-2-20. Burst Level Adjustment (VC-55 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin ① (C OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	16 (BURST LEVEL)
Specified Value	285 ± 5 mVp-p

Adjusting method:

1) Set the adjustment address to 16 with the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller to set the burst level to 285 ± 5 mVp-p.
3) Change the adjustment address to store the adjustment data in the memory.

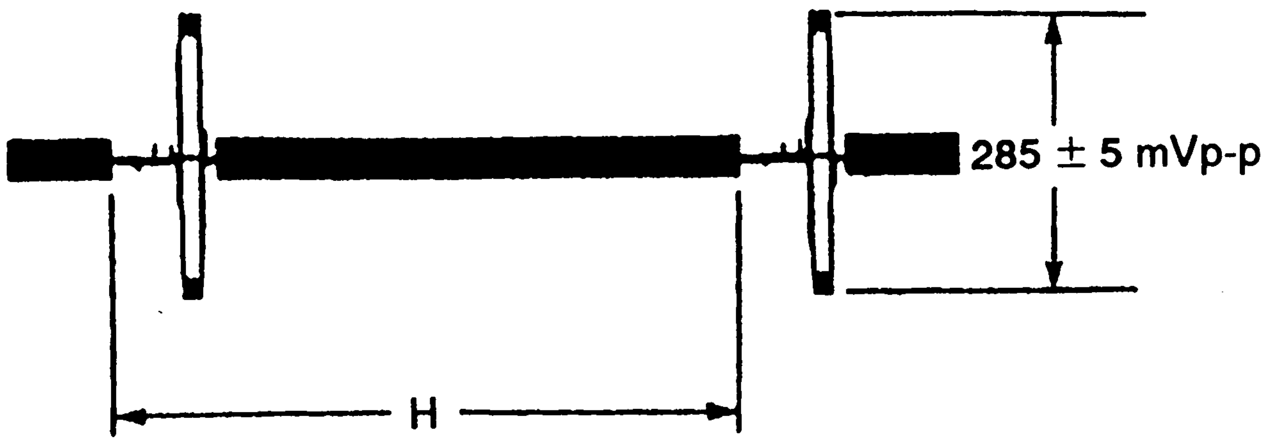


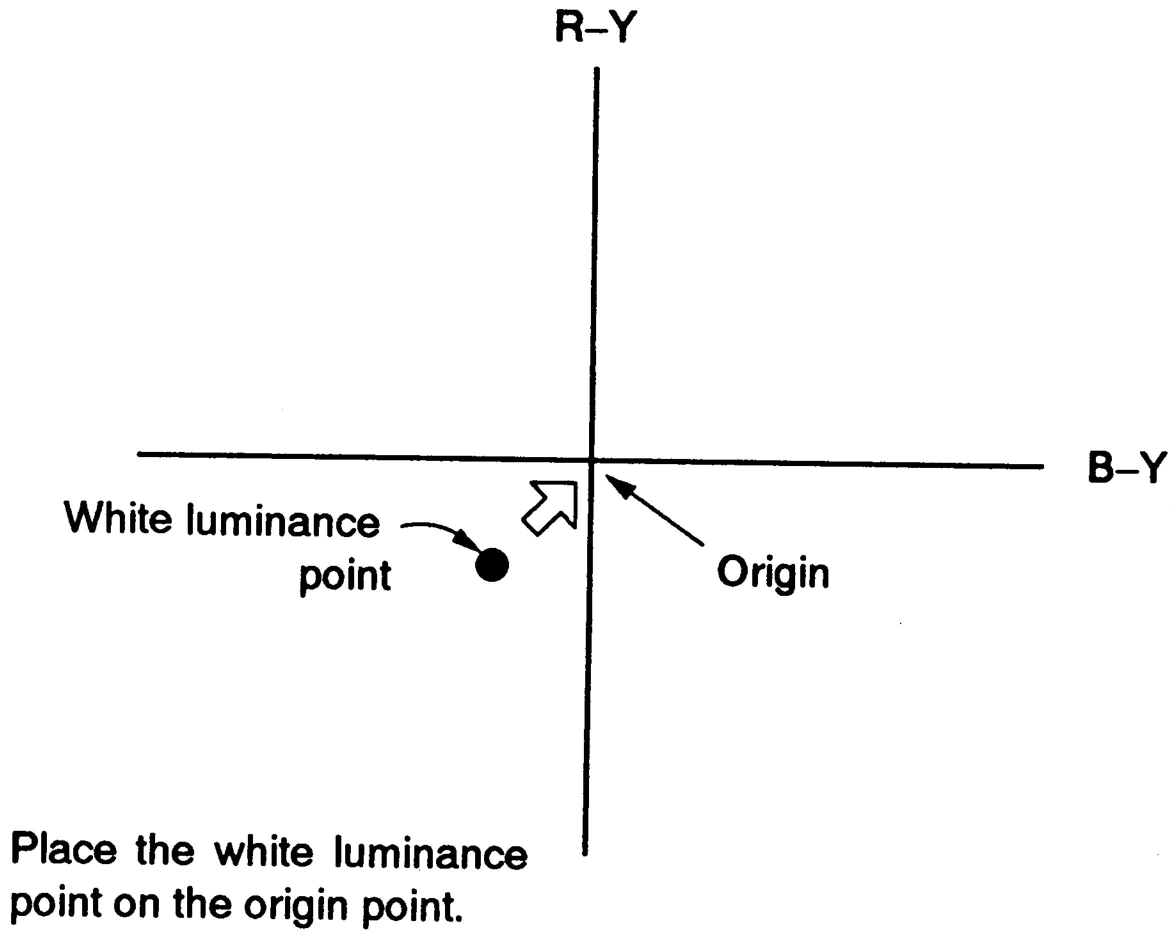
Fig. 7-27.

7-2-21. Pre-white Balance Adjustment (Method Using Vectorscope)

Subject	All white pattern
Measurement Point	VIDEO OUT terminal of the video block
Measuring Instrument	Vectorscope
Adjustment Address	11 (R GAIN) 12 (B GAIN)
Specified Value	The center of the white luminance point is within a circle with a diameter of 1 mm centered around the origin.

Adjusting method:

1) Set the adjustment address to 11 with the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller to place the white luminance point on the origin point.
3) Set the adjustment address to 12.
4) Change the adjustment data to place the white luminance point on the origin point.
5) Repeat steps 1) through 4).
6) Change the adjustment address to store the adjustment data in the memory.



Place the white luminance point on the origin point.

Fig. 7-28.

7-2-22. Pre-white Balance Adjustment (Method Using Oscilloscope) (VC-55 Board)

Subject	All white pattern
Measurement Point	Pin ① (C OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	11 (R GAIN) 12 (B GAIN)
Specified Value	Minimum chroma signal amplitude

Adjusting method:

1) Set the adjustment address to 11 with the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller to minimize the chroma signal amplitude.
3) Set the adjustment address to 12.
4) Change the adjustment data to minimize the chroma signal amplitude.
5) Repeat steps 1) through 4).
6) Change the adjustment address to store the adjustment data in the memory.

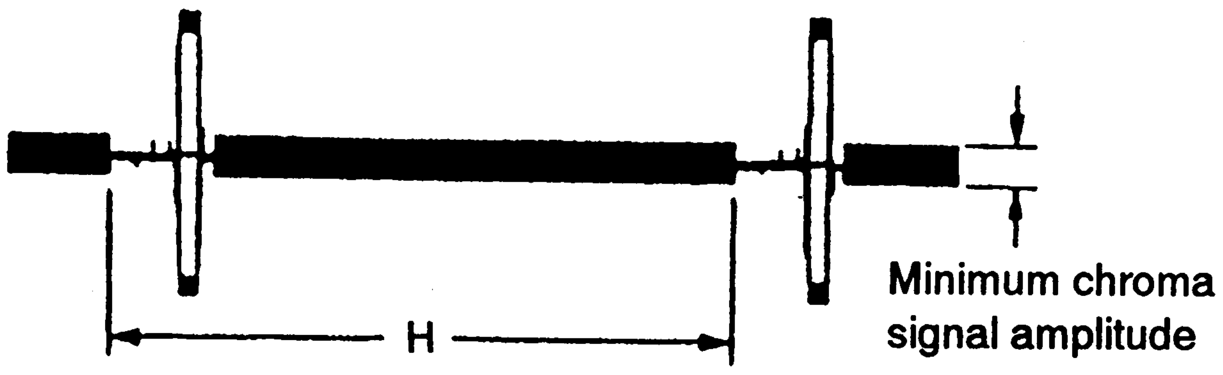


Fig. 7-29.

7-2-23. Color Reproduction Adjustment (Method Using Vectorscope)

Subject	Color bar chart standard picture frame
Measurement Point	VIDEO OUT terminals of the video block
Measuring Instrument	Vectorscope
Adjustment Address	05 (R–Y GAIN) 06 (B–Y GAIN) 07 (B–Y HUE) 08 (R–Y HUE)
Specified Value	All color luminance points are within color reproduction frame.

Note: Confirm that "Burst Level Adjustment" and "Pre-white Balance Adjustment" have been completed.

Adjusting method:

1) Adjust PHASE and GAIN of the vectorscope to set the burst luminance points to the designated position on the color reproduction frame.
2) Change the adjustment data at the various adjustment addresses using the adjustment remote controller until all color luminance points are within the color reproduction frame.
3) Change the adjustment address to store the adjustment data in the memory.

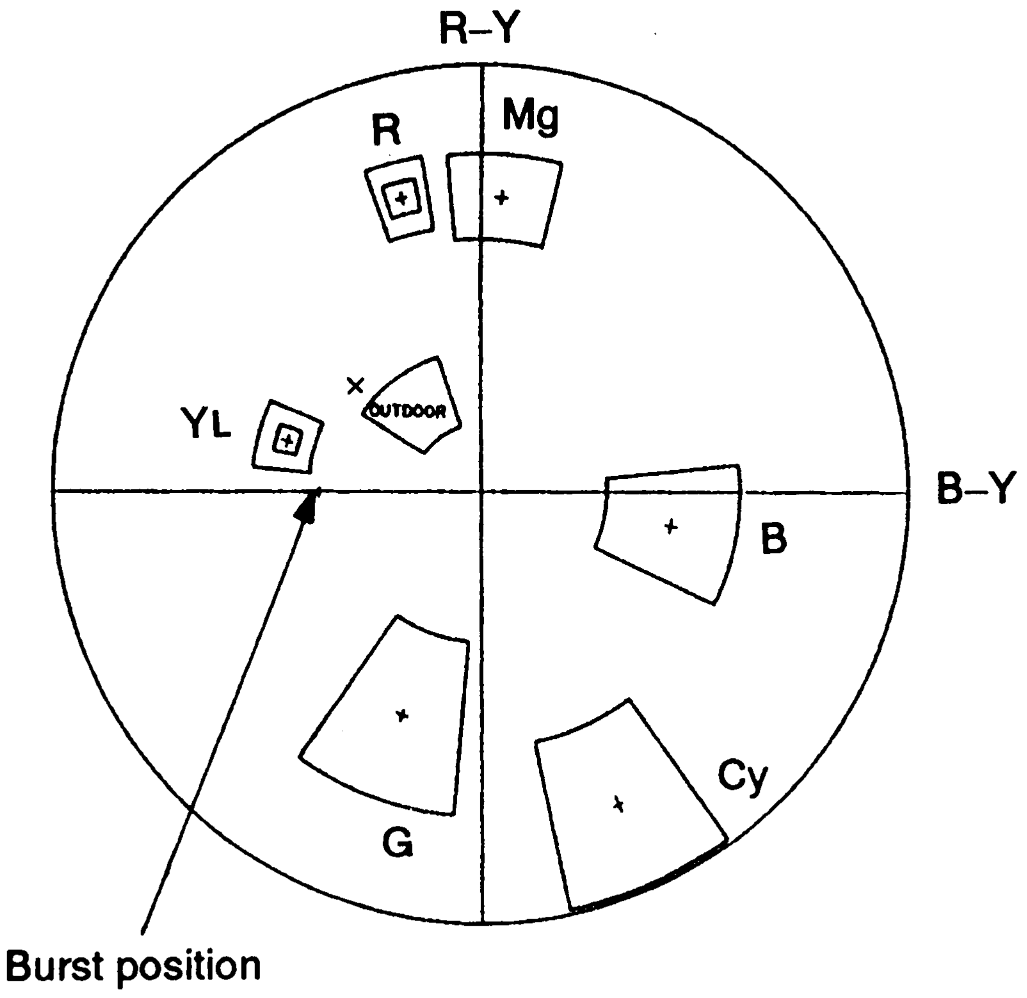


Fig. 7-30.

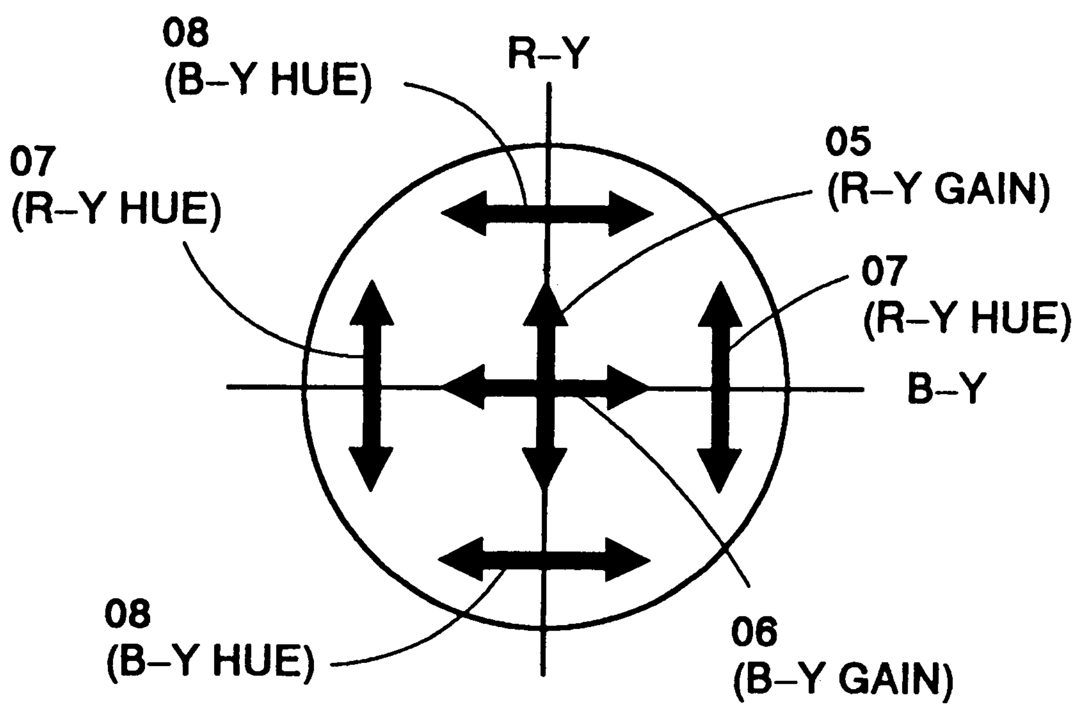


Fig. 7-31. Adjustment Address and Direction of Luminance Point Movement Direction

7-2-24. Color Reproduction Adjustment (Method using oscilloscope)

1. Gain Adjustment (VC-55 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin ① (C OUT) of CN301
Measuring Instrument	Oscilloscope External trigger: Pin ③ (Y OUT) of CN301
Adjustment Address	05 (R–Y GAIN) 06 (B–Y GAIN)
Specified Value	Red level: 532 ± 30mVp-p Yellow level: 353 ± 23 mVp-p

Note: Confirm that "Pre-white Balance Adjustment" has been completed.

Adjusting method:

1) Set the adjustment address to 06 with the adjustment remote controller and set the adjustment data to E0.
2) Set the adjustment address to 07 and set the adjustment data to B0.
3) Set the adjustment address to 08 and set the adjustment data to B0.
4) Set the adjustment address to 05 and change the adjustment data to set the chroma signal red level to 532 ± 30 mVp-p.
5) Set the adjustment address to 06 and change the adjustment data to set the chroma signal yellow level to 353 ± 23 mVp-p.
6) Repeat steps 4) and 5) until the both levels meet the specified values.
7) Change the adjustment address to store the adjustment data in the memory.
8) Perform "Hue Adjustment".

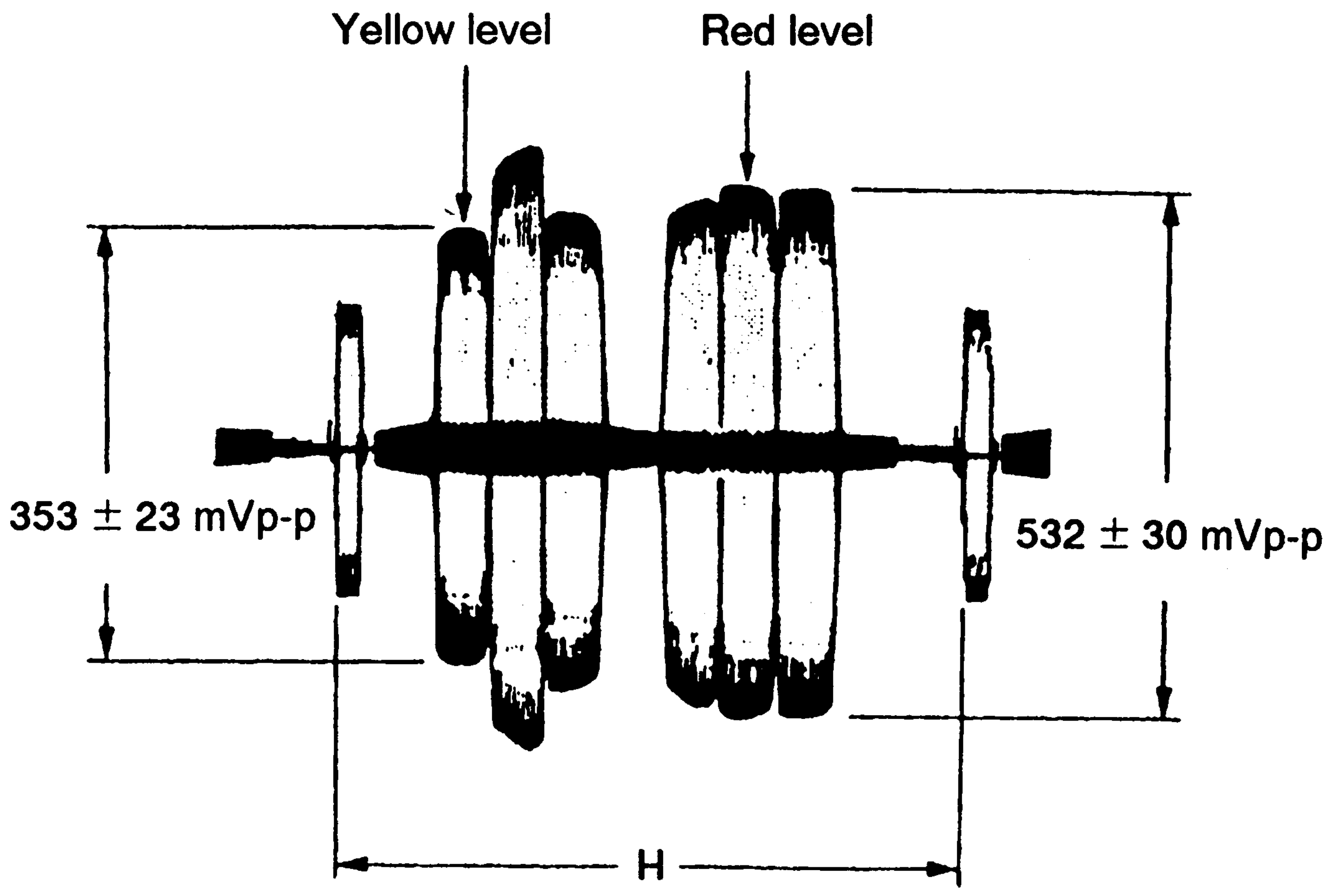


Fig. 7-32.

2. Hue adjustment

Subject	Color bar chart standard picture frame
Measurement Point	CH1 (X): Pin ㉔ of CP-20 board (B–Y) CH2 (Y): Pin ㉕ of CP-20 board (R–Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjustment Address	07 (R–Y HUE) 08 (B–Y HUE)
Specified Value	Various color luminance points within color reproduction frame.

Note: Confirm that "Pre-white Balance Adjustment" has been completed.

Adjusting method:

1) Line up the black luminance point on the oscilloscope with the origin point of the color reproduction frame.
2) Change the adjustment data at adjustment addresses 07 and 08 with the adjustment remote controller to bring the various color luminance points into the color reproduction frame.
3) Check the hue reproduced on the monitor TV and fine adjust the adjustment data at adjustment addresses 07 and 08 if necessary.
4) Change the adjustment address to store the adjustment data in the memory.

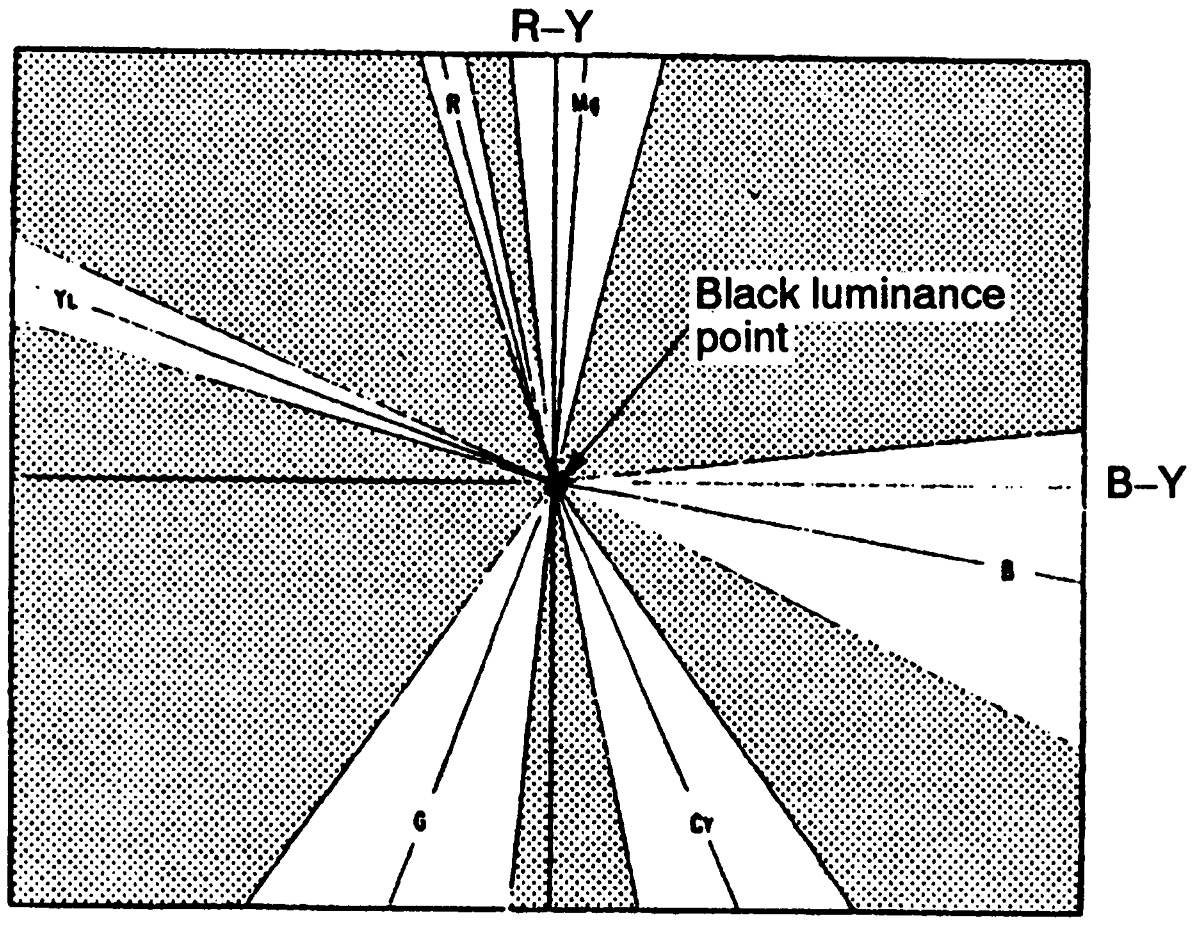


Fig. 7-33.

7-2-25. Auto White Balance Adjustments

Note: Be sure to first perform "Preset Adjustment", "Auto White Balance Adjustment" in this order.

1. Preset adjustment (VC-55 board)

Subject	White pattern standard picture frame

Note: 1) Perform preset adjustment after supplying power to the unit for at least 30 seconds.
2) When performing preset adjustment again, repeat after first turning the power off and then back on.

Preparations

1) Prepare for connecting Pin (B5) (AWB ADJ) of the check point array and Pin ⑧ (SS 5V) of W302 with a jumper wire.

Adjusting method:

1) Turn the power OFF and then ON.
2) Confirm that EVR ADJ mode is set to normal. (Pin (B6) (CAM ADJ) is open.)
3) Connect Pin (B6) (CAM ADJ) of the check point array to GND with a jumper wire.
4) Select the adjustment address 89 (AWB MODE) using the adjustment remote controller and set the adjustment data to E0. Wait at least for five seconds.
5) Change the adjustment address to store the adjustment data in the memory. Wait at least for five seconds.
6) Remove the jumper wire from Pin (B6) (CAM ADJ) of the check point array.
7) Connect Pin (B5) (AWB ADJ) of the check point array and Pin ⑧ of W302 (SS 5V) with a jumper wire.
8) Connect Pin (B6) (CAM ADJ) of the check point array to GND with a jumper wire. (Confirm that the adjustment remote controller displayed data (address 01) changes at this time.)
9) Remove the jumper wire connected to Pin (B6) (CAM ADJ) of the check point array after allowing one second or more to elapse.
10) Remove the jumper wire connected to Pin (B5) (AWB ADJ) of the check point array.
11) Perform "Auto White Balance Adjustment".

2. Auto white balance adjustment (VC-55 board)

Note: Be sure to perform this adjustment after completing "Preset Adjustment".

Subject	White pattern
Filter	Filter C14 for color temperature correction
Measuring Instrument	Oscilloscope (X-Y Mode)$^{\text{Note 1}}$
Measurement Point	CH1 (X): Pin ㉔ of CP-20 board (B–Y) CH2 (Y): Pin ㉕ of CP-20 board (R–Y)
Adjustment Address	01 (DELTA R) 02 (DELTA B) 76 (R DWN LMT) 78 (R OUT LMT) 77 (B UP LMT) 79 (B OUT LMT) 80 (R OUT DOOR) 81 (B OUT DOOR)
Specified Value	Line up the white luminance point with the black luminance point.

Note: 1) Adjustment can be made in the same manner using a vectorscope.
Make connection to the video output terminals of the video block when the vectorscope is used.
2) All calculations in this section are made in decimal.

Adjusting method:

1) Select the adjustment address 89 (AWB MODE) with the adjustment remote controller and enter adjustment data of 10.
2) Cover the lens with the C14 filter.
3) Change the adjustment data at the adjustment addresses 01 and 02 with the adjustment remote controller to line up the white luminance point and black luminance point.
(Line up the white luminance point with the origin point when using the vectorscope.)
The adjustment data of adjustment address 01 will be C_1 and the adjustment data of adjustment address 02 will be C_2.
4) Convert the adjustment data C_1 to decimal to obtain C_1', and the adjustment data C_2 to decimal to obtain C_2'.
(See Table 7-5. Hexadecimal-Decimal Conversion Table)

- **Limiter adjustment**

5) Obtain D_{76}' by the following formula.
$D_{76}'=C_1'-10$
6) Convert D_{76}' to hexadecimal and call this value D_{76}.
(Omit the decimals.)
7) Select the adjustment address 76 and enter the adjustment data D_{76}.
Select the adjustment address 78 and enter the adjustment data C_1.
8) Obtain D_{77}' by the following formula.
$D_{77}'=C_2' \times 1.8-38.4$
$D_{79}'=C_2'+6$
9) Convert D_{77}' and D_{79}' to hexadecimal and call these respective values D_{77} and D_{79}.
10) Select the adjustment address 77 and 79 with the adjustment remote controller, and enter the adjustment data D_{77} and D_{79} into respective addresses.

- **Outdoor preset adjustment**

11) Obtain D_{80}' and D_{81}' by the following formula.
$D_{80}'=C_1'+1$
$D_{81}'=C_2'+3$
12) Convert D_{80}' and D_{81}' to hexadecimal and call these values D_{80} and D_{81}. (Omit the decimals.)
13) Select the adjustment address 80 and 81, and enter the adjustment data D_{80} and D_{81} into the respective address.
14) Select the adjustment address 89, and enter the adjustment data F0.
15) Change the adjustment data at the adjustment addresses 01 and 02 with the adjustment remote controller to line up the white luminance point and black luminance point.
(Line up the white luminance point with the origin point when using the vectorscope.)
16) Select the adjustment address 89, and enter the adjustment data 00.
17) Change the adjustment address to store the adjustment data in the memory.

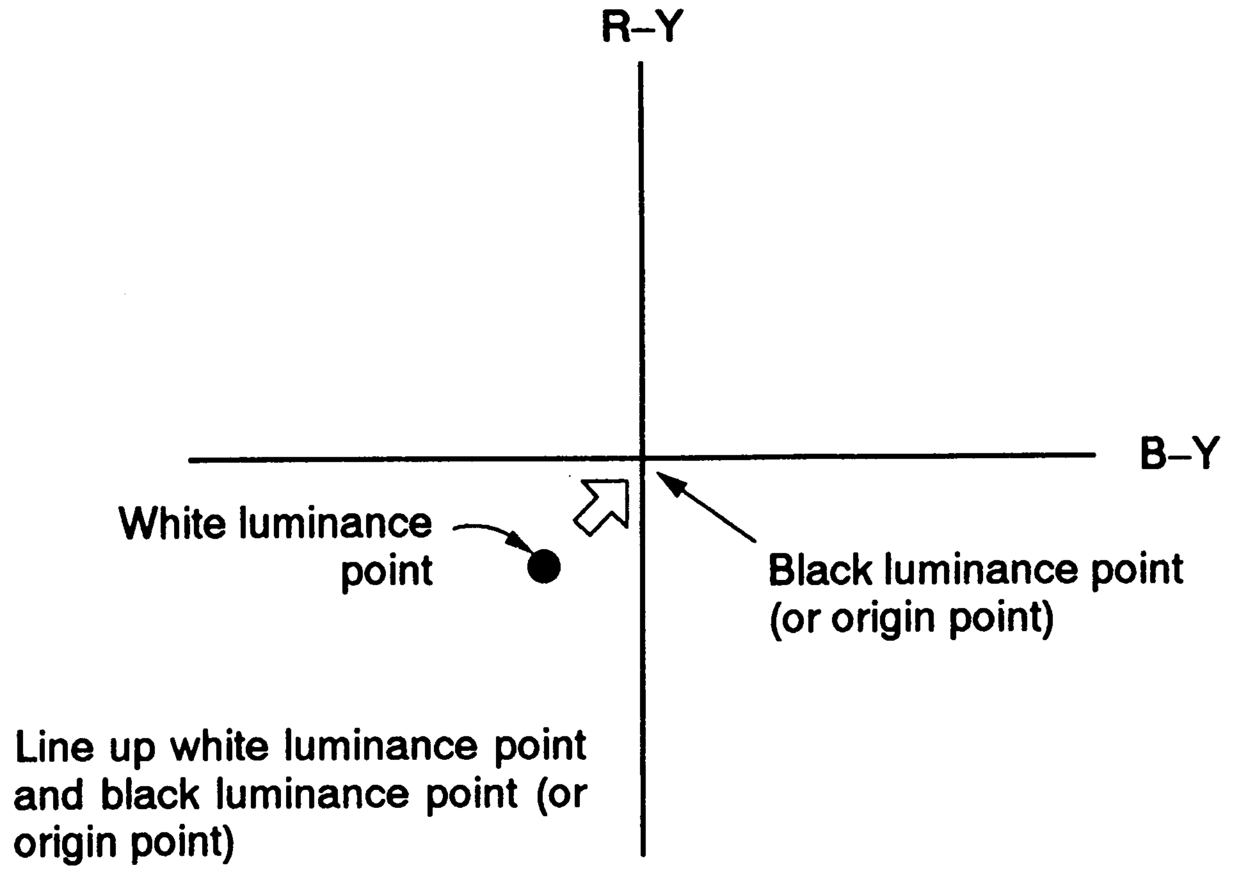

R–Y
B–Y
White luminance point
Black luminance point (or origin point)
Line up white luminance point and black luminance point (or origin point)

Fig. 7-34.

7-2-26. Outdoor White Balance Confirmation (VC-55 Board)

Subject	White pattern standard picture frame
Measurement Point	When vectorscope used: VIDEO OUT terminals of the video block When oscilloscope (X-Y mode) used: CH1 (X): Pin ㉔ of CP-20 board (B–Y) CH2 (Y): Pin ㉕ of CP-20 board (R–Y)
Measuring Instrument	
Specified Value	White luminance point should be within OUT DOOR specified frame.

Connection:
1) Remove the jumper wire connected to Pin (B6) (CAM ADJ) of the check point array. (Turn off the EVR adjustment mode.)

Checking method:
1) Using the white balance switch, select the outdoor white balance mode (☀). (☀ mark is displayed on EVF screen or monitor TV screen (when data screen ON).)
2) Confirm that the center of the white luminance point is within OUT DOOR frame of the color reproduction frame.
   Note: When using a vectorscope, adjust GAIN and PHASE of the vectorscope so that burst luminance point lines up with the burst position of the color reproduction frame.
3) When using the oscilloscope, further connect it to Pin ① of CN302 on the VC-55 board, and confirm that the chroma signal level is 190 ± 65 mVp-p.

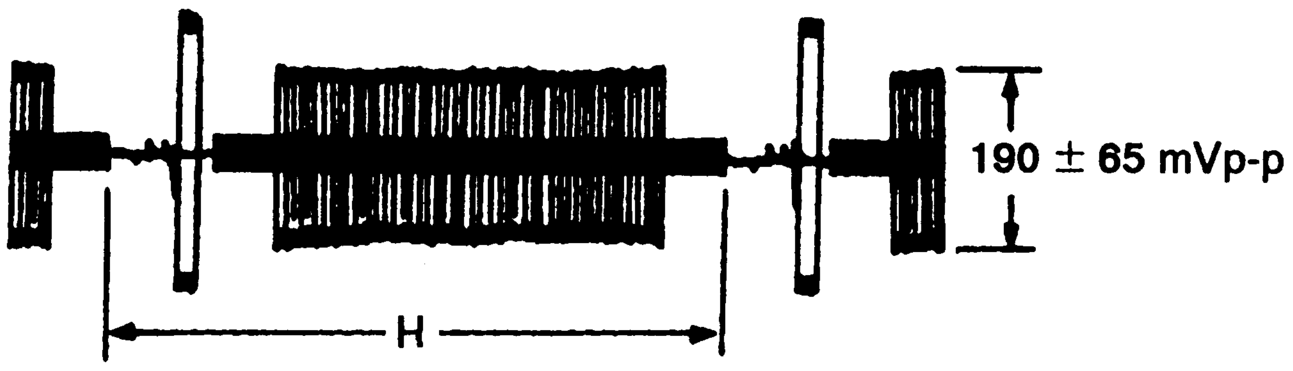


Fig. 7-35.

7-2-27. Focus Motor Speed Adjustment (VC-55 Board)

Subject	Arbitrary
Measurement Point	CN455
Measuring Instrument	AF microprocessor data reading jig
Adjustment Address	26 (FOCUS SPEED)
Specified Value	Average value of data indicated on jig=8.0 ± 0.5

Remarks: The rotation time from the close extreme to far extreme of the focus ring is approximately 2.5 seconds after completion of adjustment.

Adjusting method:
1) Turn on the auto focus with FOCUS switch (S206 on FD-13 board).
2) Select adjustment address 37 with the adjustment remote controller and enter adjustment data 01. (Setting when hunting mode)
3) Set the adjustment address to 26.
4) Change the adjustment data so that the indication on the AF microprocessor data reading jig is 08 while the focus ring is rotating.
5) Press the HOLD button of the AF microprocessor data reading jig while the focus ring is rotating to read the indication value.
6) Repeat step 5) ten times and obtain the average value.
   Specified value=8.0 ± 0.5
   Repeat steps 3) and 4) if the specified value is not satisfied.
7) Set the adjustment address to 37 and set the adjustment data to 00. (Releases hunting mode)
8) Change the adjustment address to store the adjustment data in the memory.

7-2-28. Macro Area Adjustment (AF-47 Board)

Subject	Arbitrary
Measurement Point	CN455
Measuring Instrument	AF microprocessor data reading jig
Adjustment Address	39 (MACRO)
Specified Value	Value at zoom ring WIDE position

Adjusting method:
1) Set the zoom ring to the WIDE position (11 mm position).
2) Select adjustment address 37 with the adjustment remote controller and set the adjustment data to 03. (Sets zoom position indication mode)
3) Read the data indicated on the AF microprocessor data reading jig. (Data in the range of 02 to 0F is displayed if normal.)
4) Change the adjustment address to 39.
5) Enter the data read from the jig as the adjustment data.
6) Change the adjustment address to 37 and set the adjustment data to 00. (Releases zoom position indication mode)
7) Change the adjustment address to store the adjustment data in the memory.

7-2-29. Auto-Focus LLA Adjustment (AF-47 Board)

Subject	Color bar chart standard picture frame
Filter	ND filters 1.0 (two) and 0.1 (one)
Measurement Point	CN455
Measuring Instrument	AF microprocessor data reading jig
Adjustment Address	38 (LLA)
Specified Value	(Value indicated on jig) –2

Adjusting method:

1) Cover the lens with the ND filter 2.2 (1.0+1.0+0.1+0.1).
2) Select adjustment address 37 with the adjustment remote controller and set to 0B as the adjustment data. (Sets auto-focus LLA adjustment mode)
3) Read the data indicated on the AF microprocessor data reading jig and call this value D.
4) Subtract 2 from D and make this value the LLA data. (See Table 7-5. Hexadecimal-Decimal Conversion Table.)

(Example)
When D=30 (48), LLA data is 2E (46)
When D=31 (49), LLA data is 2F (47)
( )……is decimal equivalent

5) Select adjustment address 38 with the adjustment remote controller and enter the LLA data as the adjustment data.
6) Select adjustment address 37 and set 00 as the adjustment data. (Releases auto-focus LLA adjustment mode)
7) Change the adjustment address to store the adjustment data in the memory.

7-2-30. Auto Focus Adjustment

1. AF data input preparation (AF-47 board)

Subject	All black (cover lens with black cap) White pattern standard picture frame
Measurement Point	CN455
Measuring Instrument	AF microprocessor data reading jig
Adjustment Address	45(FH B) 44(FA B) 52(FH W) 54(AGC W) 55(AGC B)
Specified Value	FH B ≦ 1C FA B ≦ 1C FH W ≦ 0F FA W ≦ 0F

Adjusting method:

1) Turn off the auto focus with FOCUS switch (S206 on FD-13 board).
2) Cover the lens with the black cap.
3) Select the adjustment address 37 with the adjustment remote controller and set the adjustment data to FF. (The auto focus filter is fixed at FH side.)
4) Read the indication on the AF microprocessor data reading jig and enter this data (FH B) into the adjustment address 45. (FH B should be within 00 to 1C.)
5) Select adjustment address 37 and enter adjustment data into FD.
6) Read the indication on the AF microprocessor data reading jig and enter this data (FA B) into the adjustment address 44. (FA B should be within 00 to 1C.)
7) Select the adjustment address 37 and set the adjustment data to 0B.
8) Read the indication on the AF microprocessor data reading jig and enter this data (AGC B) into the adjustment address 55.
9) Remove the black cap of lens and shoot the white pattern (pattern box) with the standard picture frame. (Confirm that the white diffuser surface of the pattern box is clean.)
10) Select the adjustment address 37 and set the adjustment data to FF.
11) Read the indication on the AF microprocessor data reading jig and enter this data (FG W) into the adjustment address 52. (FG W should be within 00 to 0F.)
12) Select the adjustment address 37 and set the adjustment data to FD.
13) Read the indication on the AF microprocessor data reading jig and confirm this data (FA W). (FA W should be within 00 to 0F.)
14) Select the adjustment address 37 and set the adjustment data to 0B.
15) Read the indication on the AF microprocessor data reading jig and enter this data (AGC W) into the adjustment address 54.
16) Select the adjustment address 37 and set the adjustment data to 00.
17) Change the adjustment address to store the adjustment data in the memory.
18) Perform "Auto Focus Adjustment".

2. Auto focus adjustment (AF-47 board)

Subject	Siemens star (position 1.5 m from the front of the lens reference plane (" ϕ " mark))
Measurement Point	CN455
Measuring Instrument	AF microprocessor data reading jig
Adjustment Address	41 (LOW CONT) 42 (FA SM) 43 (FH SM) 47 (GETA H) 49 (STEP)
Specified Value	$10 \leqq \text{FH SM} \leqq 40$ $40 \leqq \text{FA SM} \leqq 80$

Measuring method:

1) Place the Siemens star 1.5 m from the front of the lens reference surface (See Fig. 7-2.).
2) Set the zoom lever to its TELE-end position (88 mm) and turn off auto focus with FOCUS switch (S206 on FD-13 board).
3) Adjust the position of the camera block so that center of the Siemens star is lined up with the center of the monitor screen on the monitor TV screen.

Illumination adjustment

1) Select the adjustment address 37 with the adjustment remote controller, and enter the adjustment data 09. (This enables to indicate the iris condition on the AF microprocessor data reading jig (abbreviate to AF jig).)
2) Cover the black cap on the lens and read the indication on the AF jig. (This will be the value at opening the iris in full.)
3) Remove the black cap and confirm that the AF jig indicating value is less than reading value in step 2). (Light up the illumination to the Siemens star if the iris is fully opened.)
4) Reduce the illumination to the Siemens star gradually. (When using ND filter, increase the ND value gradually.) Fix the illumination at the point where the AF jig indication value at the full iris decreases by two. (At this time, the monitor screen should not become dark.)

Auto focus adjustment

1) Set the focus ring to the close extreme (1.3 m) and shoot the Siemens star with the standard picture frame.
2) Press FOCUS PUSH AUTO button (S207 on FD-13 board). After 2.5 seconds, confirm that a sharp image of Siemens star can be obtained and then release the hand.
3) Select the adjustment address 37 with the adjustment remote controller and enter the adjustment data FF. (Auto focus filter will be fixed at FH side.)
4) Read the indication of AF jig and convert this data D to decimal to obtain D′. Obtain FH SM′ by the following formula.
   FH SM′=D′/2.5
   Convert FH SM′ to hexadecimal and obtain FH SM.
   (Omit the decimals. FH SM should be within 10 to 40.)
5) Enter FH SM into the adjustment address 43.
6) Select the adjustment address 37 with the adjustment remote controller and enter the adjustment data FD. (Auto focus filter will be fixed at FA side.)
7) Read the indication of AF jig and convert this data D to decimal to obtain D′. Obtain FA SM′ by the following formula.
   FA SM′=D′/1.6
   Convert FA SM′ to hexadecimal and obtain FA SM.
   (Omit the decimals. FA SM should be within 40 to 80.)
8) Enter FA SM into the adjustment address 42.
9) Select the adjustment address 47 and enter the adjustment data below.
   GETA H=FH B+2
   (FH B is the data at the adjustment address 45.)
10) Select the adjustment address 41 and enter the adjustment data below.
    LOW CONT=FA B+3
    (FA B is the data at the adjustment address 44.)
11) Convert FA SM, FH SM and FH B (hexadecimal) to decimal and obtained values will be FA SM′, FH SM′ and FH B′, respectively.
    Obtain K′ by the following formula.

$$K' = \frac{\text{FA SM}'-32}{\text{FH SM}'-\text{FH B}'-4}$$

    According to the value of K′, obtain a input data from the table below.

	$K' \leqq 4$	$4 < K' \leqq 8$	$8 < K'$
Input data	02	03	04

12) Select the adjustment address 49 and enter the data obtained above step 11).
13) Select the adjustment address 37 and set the adjustment data to 00.
14) Change the adjustment address to store the adjustment data in the memory.

7-2-31. Auto Focus Confirmation

Subject	Siemens star (position 1.5 m from the front of the lens reference plane (" ϕ " mark))

Note: Perform adjustment with the EVF (electronic viewfinder) attached.

Measuring method:
1) Place the Siemens star 1.5 m from the front of the lens reference surface (See Fig. 7-2.).
2) Set the zoom lever to its TELE-end position (88 mm).
3) Adjust the position of the camera block so that center of the Siemens star is lined up with the center of the monitor screen on the monitor TV screen.
4) To open the iris with IRIS knob (RV201 on FD-13 board). At this time, adjust the illumination to the Siemens star or cover the lens with ND filter to obtain a sharp image on the monitor TV screen.
5) Turn off the auto-focus with FOCUS switch (S206 on FD-13 board).
6) Rotate the focus ring to the close-end position (1.3 m).
7) Press PUSH AUTO button (S207 on FD-13 board).
8) Confirm that there is focusing within 2.5 seconds and a sharp image can be obtained.
9) Let go of PUSH AUTO button, and rotate the focus ring to the far-end position (∞).
10) Press PUSH AUTO button.
11) Confirm that there is focusing within 3.5 seconds and a sharp image can be obtained.

7-3. DIGITAL TITLER SYSTEM ADJUSTMENT

7-3-1. Titler PLL Adjustment (SS-95 Board)

Subject	Arbitrary
Measurement Point	Hot side terminal of C163 or Pin ⑬ of IC161.
Measuring Instrument	Digital voltmeter
Adjustment Element	CT161
Specified Value	2.45 ± 0.1 Vdc

Connections:
1) Connect Pin (64) of IC161 and Pin ⑦ (SS 5V) of CN211 with a jumper wire.

Adjusting method:
1) Adjust with CT161 to 2.45 ± 0.1 Vdc.

7-3-2. Title A/D Level Adjustment

Subject	Color bar chart standard picture frame
Measurement Point	Confirmed on monitor TV
Measuring Instrument	
Adjustment Address	09 (TITLE A/D)
Specified Value	Blue and black areas are superimposed (become white). All areas other than above does not change.

Note: Make sure that "Y Level Adjustment" has been completed.

Adjusting method:
1) Press TITLE 1 (S706 on CK-18 board) and display "T1 WHT" on the EVF or data screen.
2) Select the adjustment address 09 with the adjustment remote controller.
3) Press MEMORY button (S708 on CK-18 board).
4) Confirm that the blue and black areas are superimposed and become white and that the red and magenta areas does not change.
5) If this specification is not satisfied, change the adjustment data with the adjustment remote controller and repeat 3) and 4).
6) Change the adjustment address to store the adjustment data in the memory.

The shaded area should be changed to white.

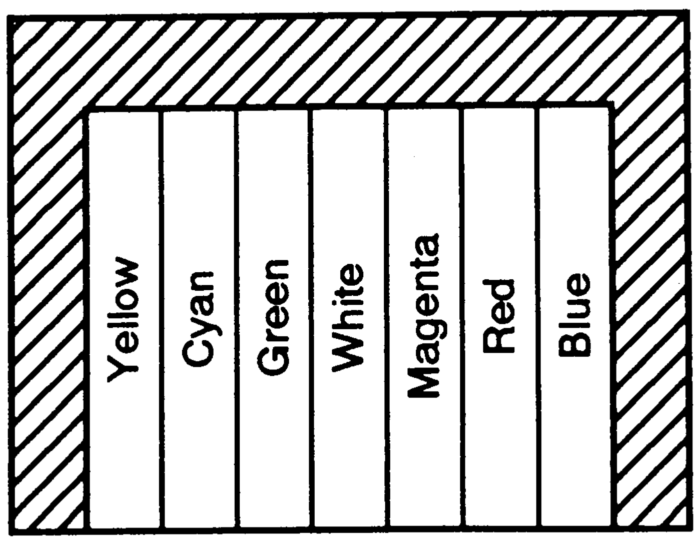


Fig. 7-36.

7-3-3. Title Pedestal Adjustment (VC-55 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin ① (C OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	03 (PED)
Specified Value	Minimum 3.58 MHz chroma component

Adjusting method:

1) Press TITLE 1 (S706 on CK-18 board).
2) Turn on the data screen with DATA SCREEN button (S741 on VK-2 board) and confirm that "T1 WHT" characters are displayed on the monitor screen. (If another color is displayed, press COLOR button (S709 on CK-18 board) until "T1 WHT" is displayed.)
3) Cover the lens with the black cap and press MEMORY button (S708 on CK-8 board).
4) Set the adjustment address to 03 with the adjustment remote controller.
5) Change the adjustment data with the adjustment remote controller to set the 3.58 MHz chroma component to minimum amplitude.
6) Change the adjustment address to store the adjustment data in the memory.

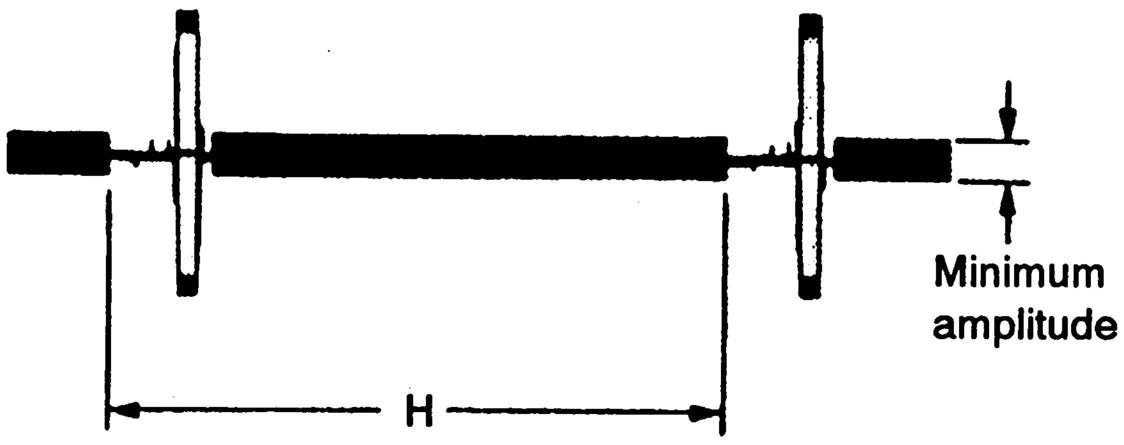


Fig. 7-37.

7-3-4. Title Y Level Adjustment (VC-55 Board)

Subject	All black (cover lens with black cap)
Measurement Point	Pin ③ (Y OUT) of CN301
Measuring Instrument	Oscilloscope
Adjustment Address	10 (CHARACTER)
Specified Value	500^{+80}_{-70}mV

Adjusting method:

1) Press TITLE 1 button (S706 on CK-18 board).
2) Turn on the data screen with DATA SCREEN button (S741 on VK-2 board) and confirm that "T1 WHT" characters are displayed on the monitor screen.
3) Cover the lens with the black cap and press MEMORY button (S708 on CK-8 board).
4) Set the adjustment address to 10 with the adjustment remote controller.
5) Change the adjustment data with the adjustment remote controller to set the Y signal level to 500^{+80}_{-70} mV.
6) Change the adjustment address to store the adjustment data in the memory.

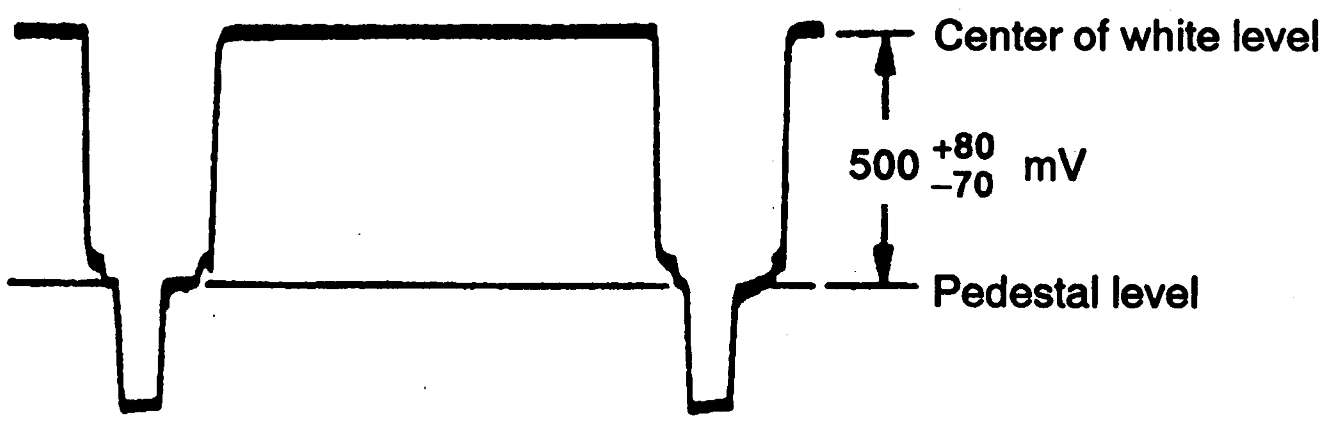


Fig. 7-38.

7-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

7-4-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for operation check Monoscope portion
Specified Value	See Fig. 7-40.

Adjusting method:

1) Adjust the volume array Ⓓ (BRIGHT) for a luminance level which provides appropriate brightness of the CRT screen. (See Fig. 7-41.)
2) Loosen the DY (deflection yoke) tightening nut.
3) Make the image horizontal by rotating DY.
4) Re-tighten the DY tightening nut. (Do not tighten excessively.)

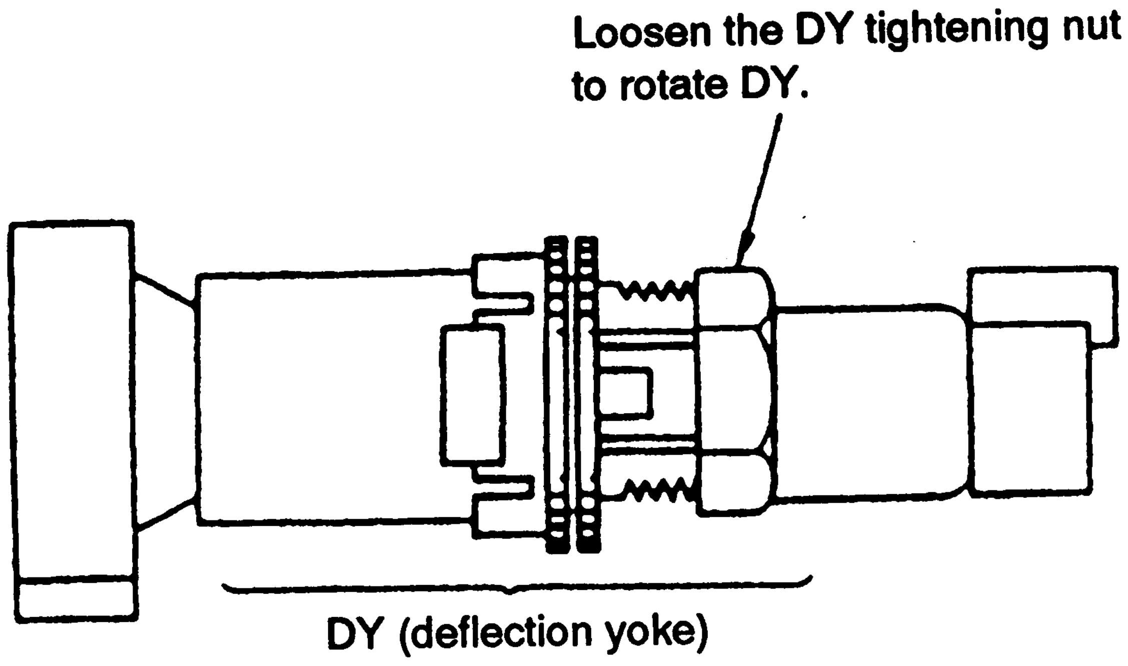
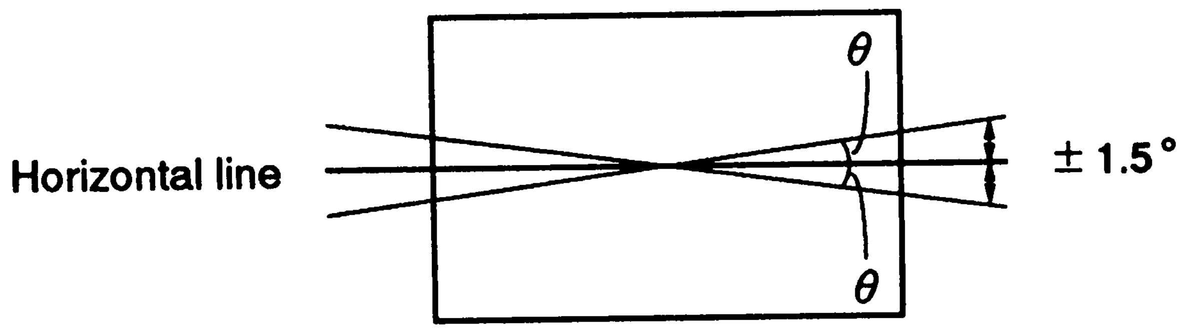
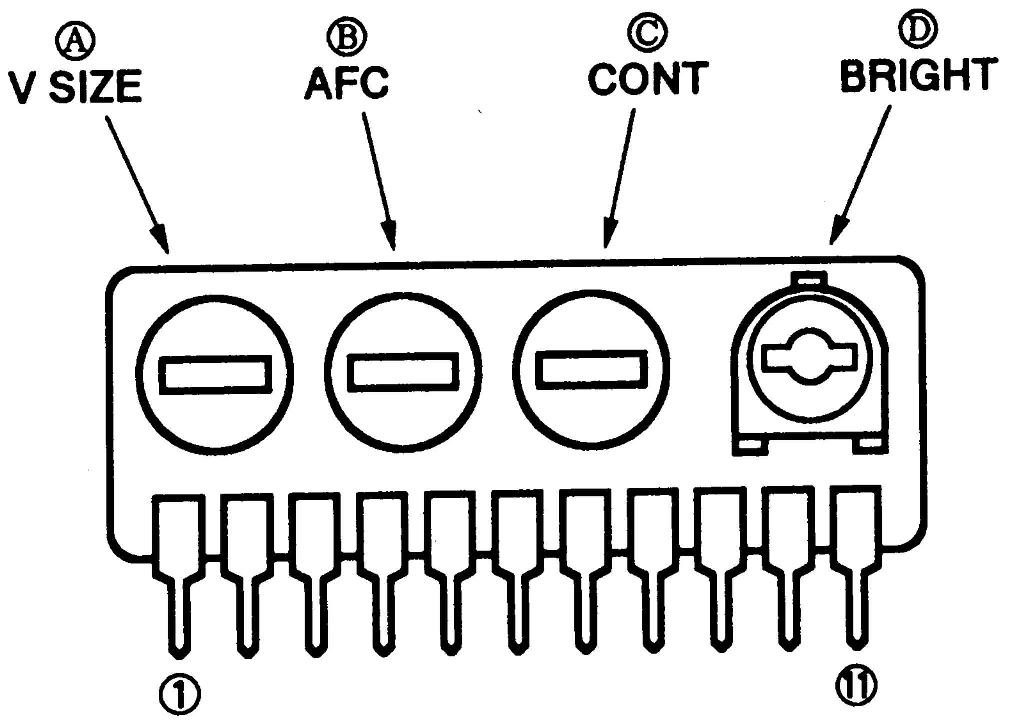

Loosen the DY tightening nut to rotate DY.
DY (deflection yoke)

Fig. 7-39.


θ
Horizontal line
± 1.5 °
θ

Specified value: Image should be within ± 1.5 ° of horizontal line.

Fig. 7-40.


Ⓐ
V SIZE
Ⓑ
AFC
Ⓒ
CONT
Ⓓ
BRIGHT
①
⑪

Volume array (CP901)

Fig. 7-41.

7-4-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for operation check Monoscope portion
Specified Value	See Fig. 7-43.

Adjusting method:

1) Turn the centering adjustment rings to provide an image with even right, left, upper and lower margins.

Note: Since the centering position is affected by the earth magnetism, turn the equipment about 360 ° horizontally, and make adjustments at the position which exhibits center portion of displacements on the image.

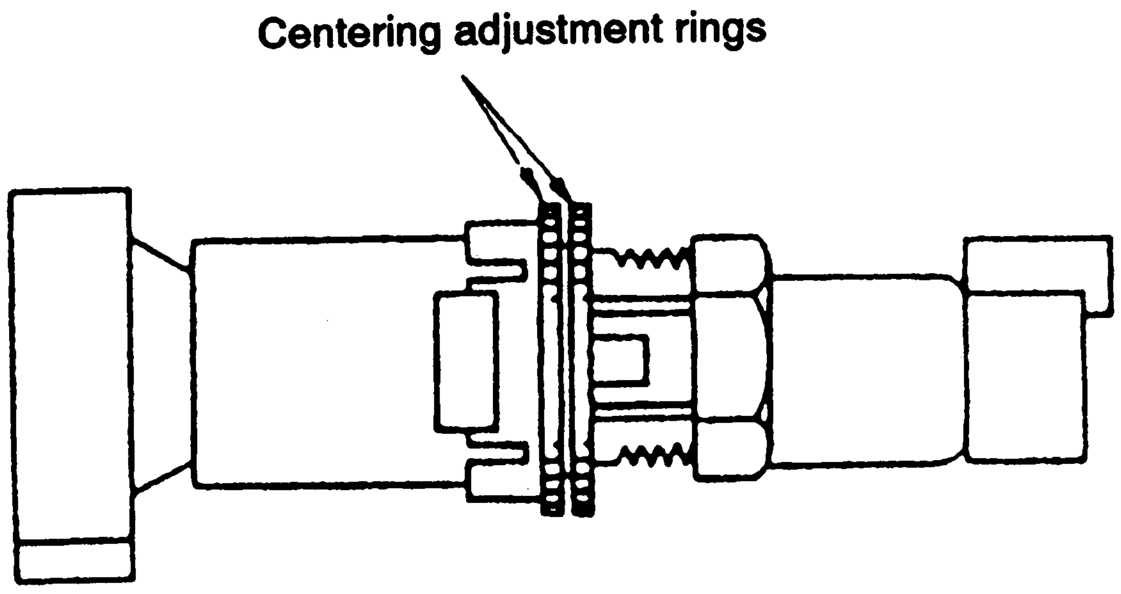

Centering adjustment rings

Fig. 7-42.

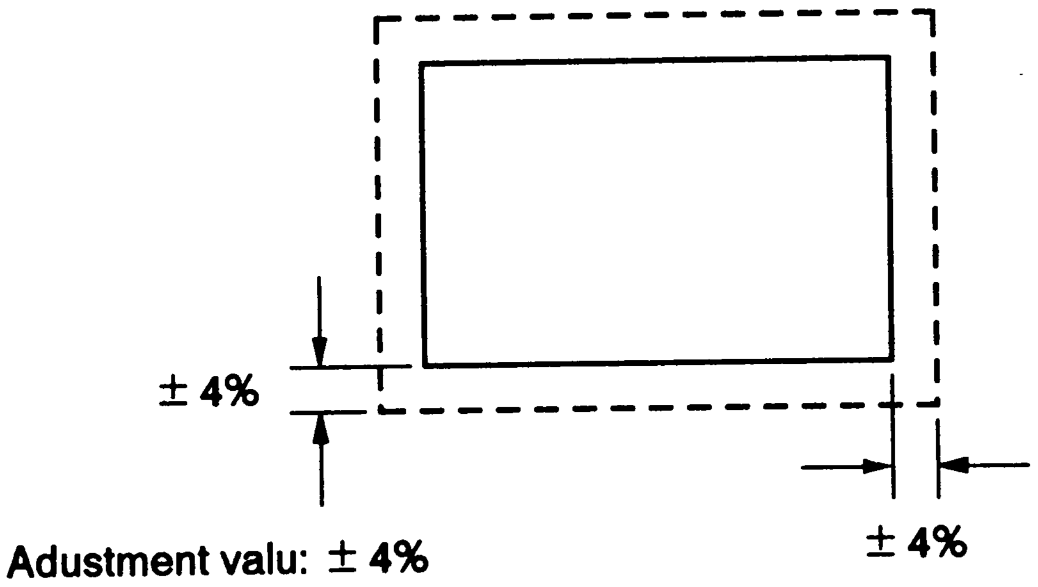

± 4%
Adustment valu: ± 4%
± 4%

Fig. 7-43.

7-4-3. AFC Adjustment (VF-13 Board)

Mode	E-E or camera stand-by
Signal	Color bar
Measurement Point	C915 ⊕ terminal
Measuring Instrument	Digital voltmeter or oscilloscope (DC range)
Adjustment Element	Volume array Ⓑ (AFC)
Specified Value	2.3 ± 0.1 Vdc

Adjusting method:

1) Adjust to 2.3 ± 0.1 Vdc with the volume array Ⓑ. (Refer to Fig. 7-41.)

7-4-4. Horizontal Amplitude Adjustment (VF-13 Board)

Mode	Playback
Signal	Alignment tape for operation check Monoscope portion
Adjustment Element	C905
Specified Value	8 ± 3%

Adjusting method:

1) Adjust RV901 for focusing.
2) Line up the upper and lower sections of the monoscope image with the upper and lower edges of the screen by rotating the volume array Ⓐ.
(See Fig. 7-41.)
3) Rotate the volume array Ⓓ to set the brightness to the normal level.
4) Short or open the pattern $\boxed{A}$ of the H size adjustment capacitor (C905) to provide horizontal overscans of 8 ± 3% (total of left and right).
(See Fig. 7-45.)

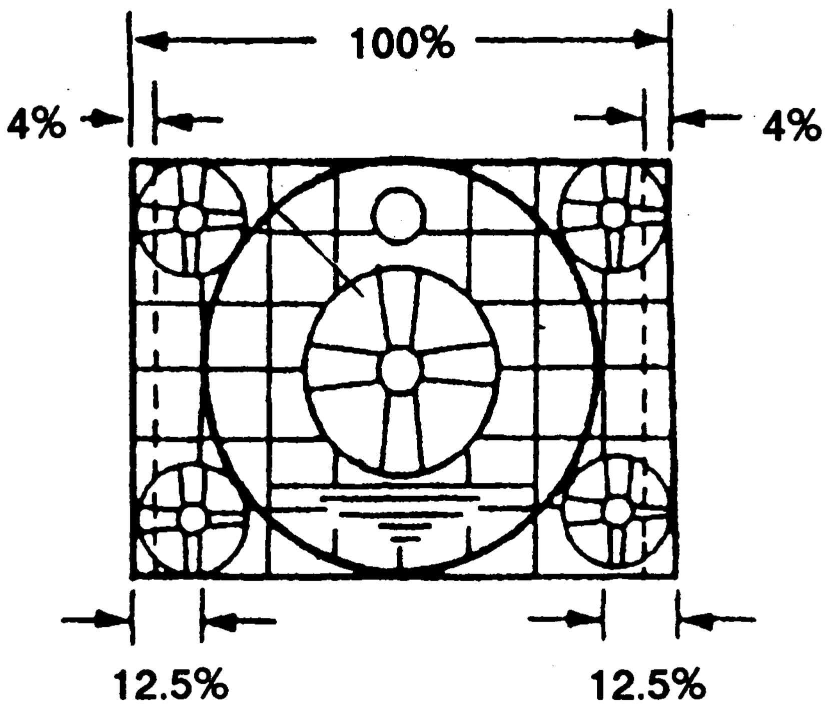
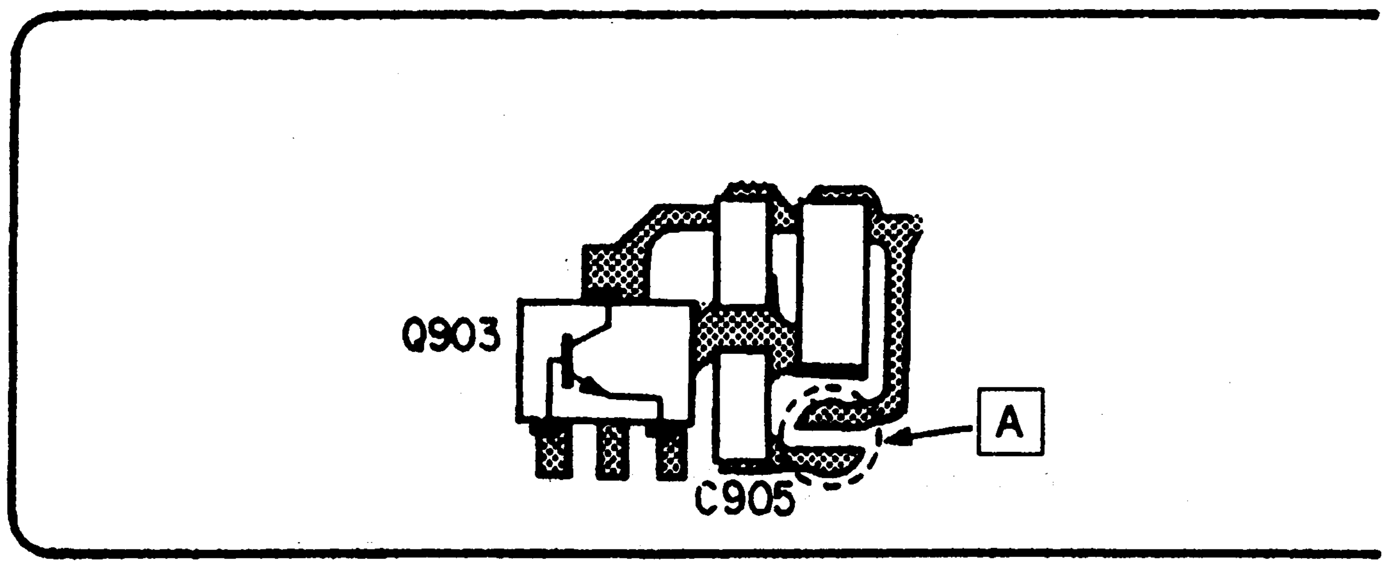


Fig. 7-44.



VF-13 board (Conductor side)

A section	H size
Open	Small
Short	Large

Fig. 7-45.

7-4-5. Vertical Amplitude Adjustment (VF-13 Board)

Mode	Playback
Signal	Alignment tape for operation check Monoscope portion
Adjustment Element	Volume array Ⓐ (V size)
Specified Value	8 ± 3%

Adjusting method:

1) Adjust with the volume array Ⓐ to set the vertical direction overscan to 8 ± 3% (total of upper and lower).
(Refer to Fig. 7-41.)

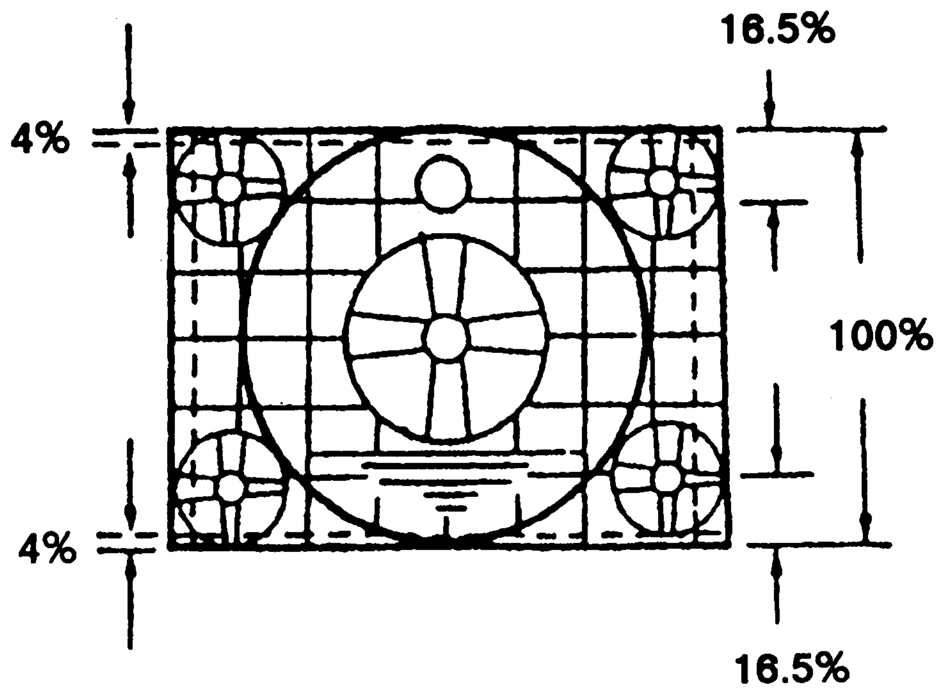


Fig. 7-46.

7-4-6. Brightness and Contrast Adjustment (VF-13 Board)

Mode	Playback
Signal	Alignment tape for operation check Monoscope portion
Adjustment Element	Brightness: Volume array Ⓓ (BRIGHT) Contrast: Volume array Ⓒ (CONT)

Adjusting method:

1) Adjust the volume arrays Ⓓ and Ⓒ alternately until the bright and dark areas of a gray scale are displayed correctly.
(See Fig. 7-41.)
(The bright area should not be as bright as the cross-hatches in the monoscope circle, and the brightness of the dark areas should be such that discrimination between the darkest and third darkest area is possible.)

7-4-7. Focus Adjustment

Mode	Playback
Signal	Alignment tape for operation check (WR5-8NSE) Monoscope portion
Adjustment Element	RV901

Adjusting method:

1) Adjust RV901 to obtain the best focusing.

SECTION 8
MECHANISM BLOCK ADJUSTMENTS

Mechanism Block Adjustments

Refer to the separate "8 mm Video Mechanism Block Adjustment Manual Ⅲ U Mechanism" for adjustment and checking of the mechanism block and for replacement of mechanical parts.
Refer to the following for setting of track shift mode.

8-1. TRACK SHIFT MODE SETTING

[Setting method]

- Connect Pin ① (TEST B) and Pin ③ (TEST A) of CN214 on the FD-13 board to Pin ② (GND). (See Fig. 8-1.)

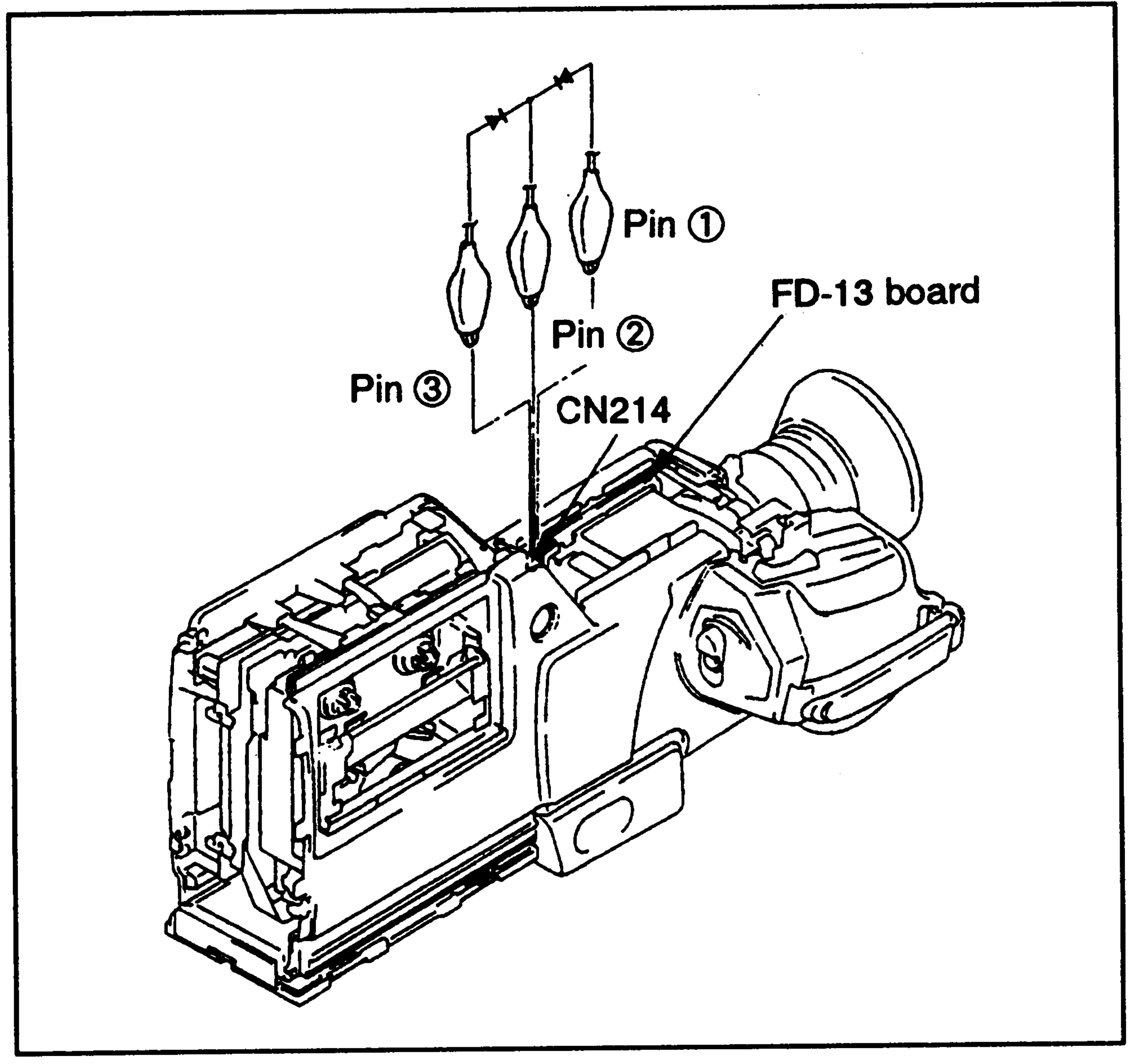

Pin ①
FD-13 board
Pin ②
Pin ③
CN214

Fig. 8-1.

8-2. PREPARATION FOR ADJUSTMENT

1) Perform cleaning of the tape running surface (tape guides, drum, capstan shaft, and pinch roller).
2) Connect the oscilloscope.
   CH 1: Pin ④ (RF CH2) of CN802 on the MR-19 board
   External trigger: Pin ② (RF SWP) of CN802 on the MR-19 board
3) Play back the alignment tape (WR5-1NP: 8-967-995-02) for tracking.
4) Confirm that the RF waveform on oscilloscope at both entrance and exit sides is flat. (See Fig. 8-2.)
   Perform the adjustment described below if not flat.

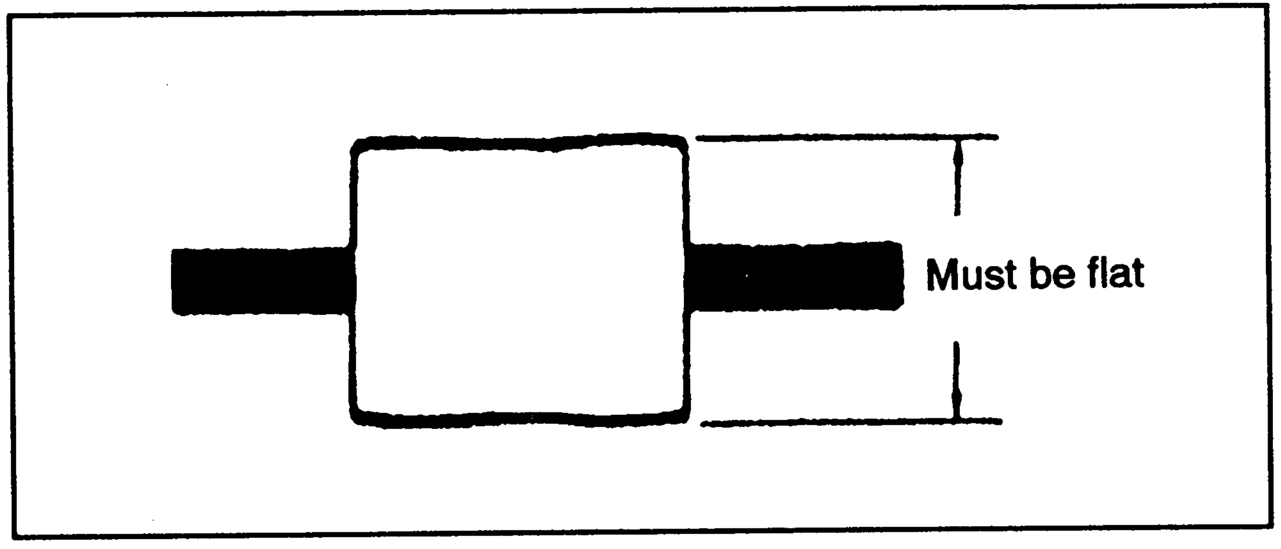

Must be flat

Fig. 8-2.

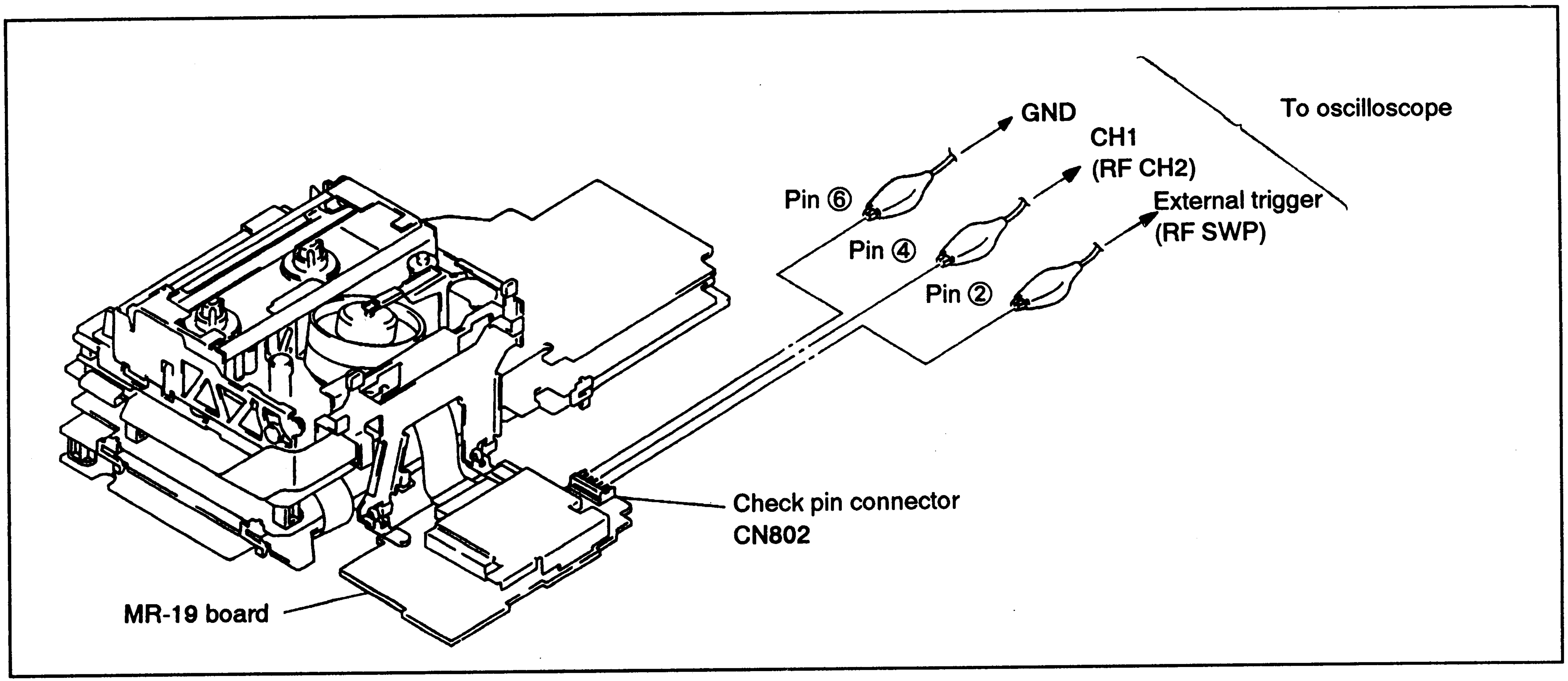

GND
To oscilloscope
CH1
(RF CH2)
Pin ⑥
External trigger
(RF SWP)
Pin ④
Pin ②
Check pin connector
CN802
MR-19 board

Fig. 8-3.

SECTION 9
VIDEO BLOCK ADJUSTMENTS

During adjustment, see the arrangement diagram for adjustment parts from page 354.

9-1. PRE-ADJUSTMENT PREPARATIONS

Use the following measuring instruments for adjustment of the VTR block.

9-1-1. Required Equipment

1) Monitor TV
2) Dual trace oscilloscope of over 10 MHz band, incorporates delay mode. (Use 10:1 probe unless otherwise specified)
3) Frequency counter
4) Pattern generator with video output terminal (See 9-1-3.)
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply (over 3A voltage capacitance)
11) Alignment tapes
    - For tracking adjustment (WR5-1NP)
      Parts Code: 8-967-995-02
    - For video frequency characteristics adjustment (WR5-7NE)
      Parts Code: 8-967-995-13
    - For L mode operation check for SP (WR5-5NSP)
      Parts Code: 8-967-995-42
      or (WR5-4NSP)
      Parts Code: 8-967-995-41
      for LP (WR5-4NL)
      Parts Code: 8-967-995-51
      for AFM stereo operation check (WR5-9NS)
      Parts Code: 8-967-995-23
    - E mode operation check (ME tape)
      for SP (WR5-8NSE)
      Parts Code: 8-967-995-43
      for LP (WR5-8NLE)
      Parts Code: 8-967-995-52

9-1-2. Precautions

1. Switch setting

Unless otherwise specified, set switches to the following positions.

- POWER (CAMERA/OFF/VTR) switch
  (S743 on VK-2 board)......VTR
- DIGITAL EFECT switch (S761 on DK-3 board)......OFF
- Hi8 switch (S770 on DK-3 board)......AUTO

2. Connection to the camera block

The camera block is not required other than "Battery down adjustment". Perform adjustment with the camera block removed; however, only DC-DC converter should be connected. Connect as follows.

- DC-DC converter CN011 — CN221 on SS-95 board
  Extension cable: 7-pin flat cable (1.25 mm pitch)
  Parts code: J-6082-033-A
- DC-DC converter CN010 — CN220 on SS-95 board
  Extension cable: 8-pin flat cable (1.25 mm pitch)
  Parts code: J-6082-032-A
- DC-DC converter CN012 — W602 on FU-70 board
  Extension cable: 4-pin cable (2 mm pitch)
  Parts code: J-6080-871-A

3. Connection to the left cabinet

When the view finder and adjustment remote commander are not required, neither the left cabinet is required. Remove the cabinet by disconnecting the following sections:

- CN821 on SW113 board (3-pin)
- CN811 on VJ-16 board (4-pin)
- CN812 on VJ-16 board (7-pin)
- CN861 on HJ-5 board (11-pin)

4. Connection to the right cabinet

Following connections are required for driving the camera block. Connect with using extension cables.

- CN211 on FD-13 board — W227 on SS-95 board
  Extension cable: 20-pin flat cable (1 mm pitch)
  Parts code: J-6082-031-A

Since the following connections are not required for adjustments, remove them if necessary.

- CN212 (26-pin) on FD-13 board......LCD
- CN301 (6-pin) on PC-35 board......Stereo microphone jack
- CN312 (6-pin) on PC-35 board......Headphone jack
- CN310 (5-pin) on PC-35 board......Monaural microphone jack
- CN309 (4-pin) on PC-35 board......Narration microphone
- CN232 (2-pin) on AS-22 board......Speaker

Since the following connections are not required other than audio circuit adjustment, remove them if necessary.

- CN306 (10-pin) on PC-35 board......Audio selection switch
- CN311 (3-pin) on PC-35 board......Level meter
- CN302 (6-pin) on PC-35 board......REC LEVEL VR
- CN228 (4-pin) on SS-95 board......Audio monitor switch,
  lithium battery

5. Upper cabinet (stereo microphone, operation panel)

Since the power switch and the operation switch are on the upper cabinet, be sure to connect the upper cabinet. Connect the following connector to the right cabinet. Other connections are not required.

- CN701 on CK-18 board — W202 (15-pin) on FD-13 board

6. Connection to DI-21 board and DC-DC converter (2)

Since the Y, C and sync signals pass through the DI-21 board, the following connections are required. When adjusting on the VI-66 and SS-95 boards, connect as follows with extension cables.

- CN304 on PC-35 board — DC-DC converter (2) CN004
  Extension cable: 3-pin cable (2 mm pitch)
  Parts code: J-6080-872-A or J-6080-863-A
- CN408 on VI-66 board — CN601 on DI-21 board
  Extension cable: 2-pin cable (1.5 mm pitch)
  Parts code: J-6080-912-A
- CN414 on VI-66 board — CN602 on DI-21 board
  Extension cable: 2-pin cable (1.5 mm pitch)
  Parts code: J-6080-912-A

7. Connection between the PC-35 board and the SS-95/MR-19 boards

When adjusting on the VI-66 and SS-95 boards, extend or remove the connectors as follows.

- Connect:
  CN307 on PC-35 board — W002 on SS-95 board
  Extension cable: 22-pin flat cable (1 mm pitch)
  Parts code: J-6082-037-A
- Disconnect:
  CN303 on PC-35 board — CN805 on MR-19 board (8-pin)

As for the other connections, refer to item 4 or 6.

9-1-3. Connection of Equipment

Connect equipments as shown in Fig. 9-1 according to the indication of the input terminal (S VIDEO or VIDEO) and set POWER (CAMERA/OFF/VTR) switch (S743 on VK-2 board) to VTR position for adjustments; however, except when performing "digital picture circuit adjustment".

The input terminal is indicated in the signal column ( ). Unless otherwise specified, any of these input terminals can be used. Further, S VIDEO IN terminal has priority. When adjusting using VIDEO IN terminal for input, remove a connector from S VIDEO IN terminal.

Note: In case an adjustment is performed with using VIDEO input, although instructed to adjust with using S VIDEO input, the required specification may not be satisfied. Be sure to follow the indications.
When adjusting with using a VTR that has the S video output terminal as a signal source, according of which performance of this unit is effected. Be sure to use a pattern generator with Y/C separation output terminal as possible.

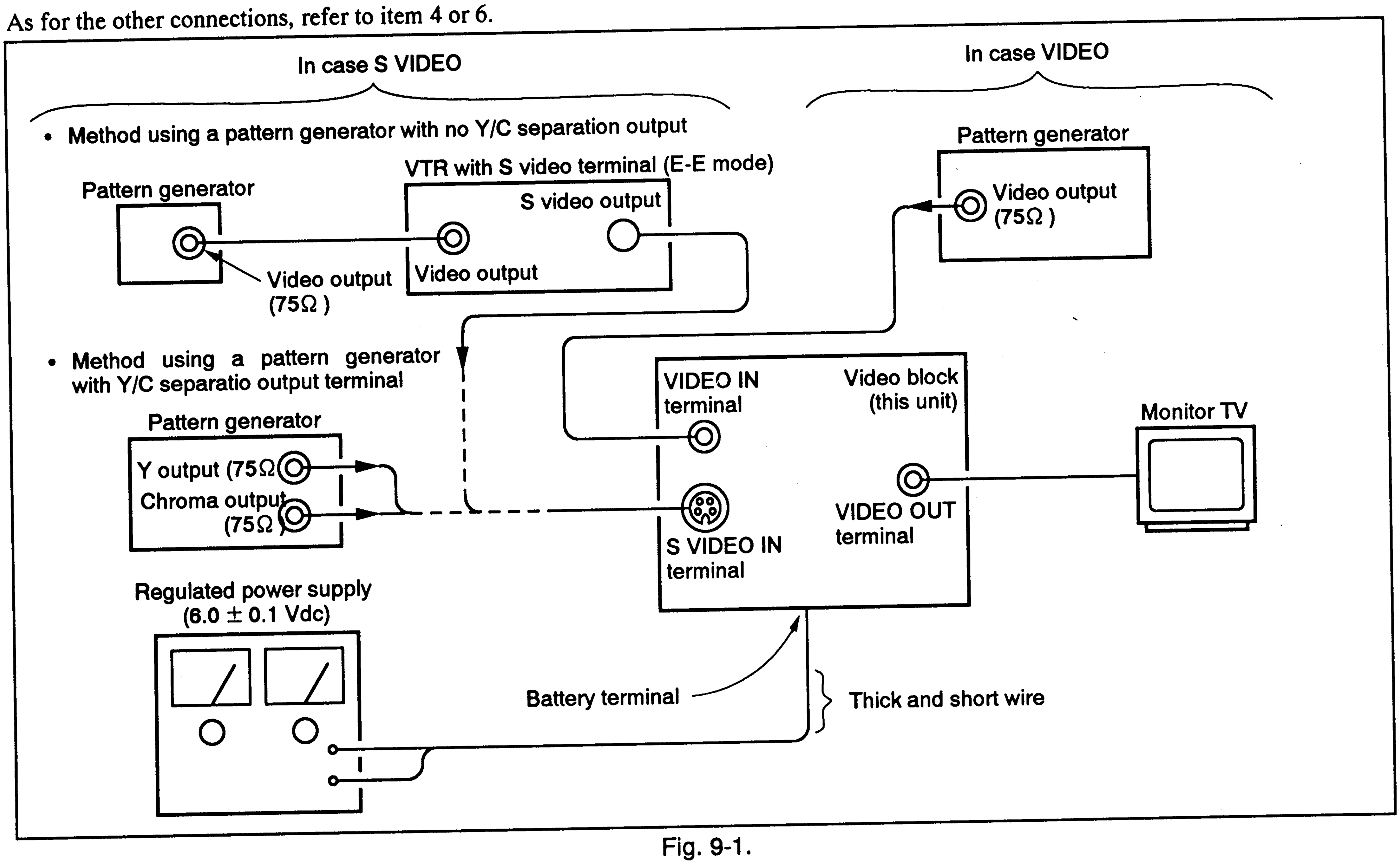

In case S VIDEO
• Method using a pattern generator with no Y/C separation output
Pattern generator
VTR with S video terminal (E-E mode)
S video output
Video output (75Ω)
Video output
• Method using a pattern generator with Y/C separatio output terminal
Pattern generator
Y output (75Ω)
Chroma output (75Ω)
In case VIDEO
Pattern generator
Video output (75Ω)
VIDEO IN terminal
Video block (this unit)
S VIDEO IN terminal
VIDEO OUT terminal
Monitor TV
Regulated power supply (6.0 ± 0.1 Vdc)
Battery terminal
Thick and short wire

Fig. 9-1.

9-1-4. Input Signal Check

Since the video output signal obtained from the pattern generator is used as an adjusting signal for the VTR block, this video output signal should be within the required specifications.

1. When S VIDEO Input

Connect an oscilloscope to Y signal terminal of S VIDEO IN terminal (J901 on PJ-22 board) and confirm that the sync component of Y signal is approximately 0.3 Vp-p and that the amplitude of the video signal is approximately 0.7 Vp-p. (Furthermore, if using a VTR with S video output terminal, confirm that there are no residual chroma and burst signals.) Connect an oscilloscope to the chroma signal of the S VIDEO IN terminal and confirm that the burst signal amplitude of the chroma signal is approximately 0.3 Vp-p with flat characteristics, and that the signal amplitude ratio between the burst and chroma signals is 0.30:0.66. The Y and chroma signals used for the video block adjustment are shown in Fig. 9-2.

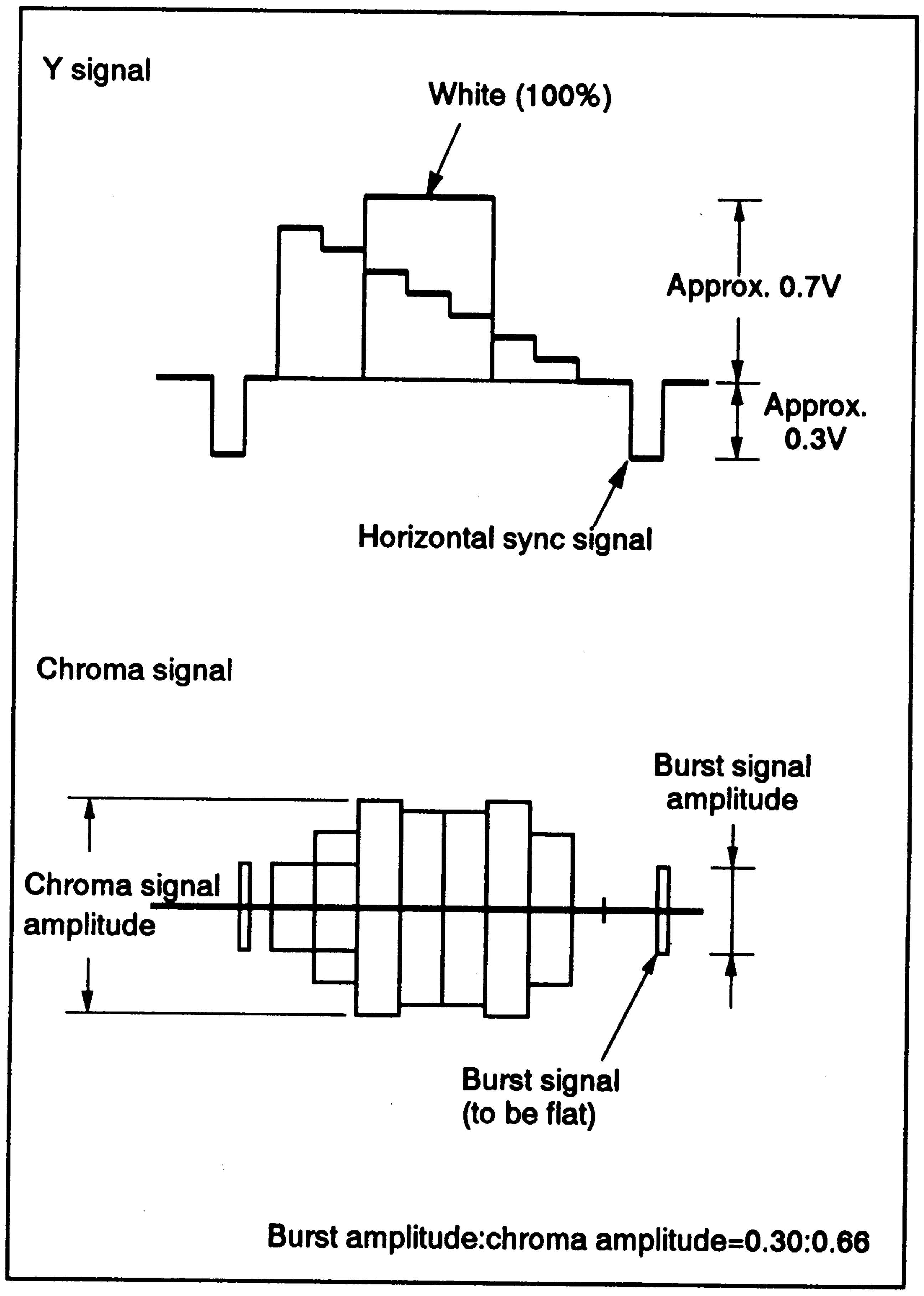

Y signal
White (100%)
Approx. 0.7V
Approx. 0.3V
Horizontal sync signal
Chroma signal
Burst signal amplitude
Chroma signal amplitude
Burst signal (to be flat)
Burst amplitude:chroma amplitude=0.30:0.66

Fig. 9-2. Color bar signal of pattern generator

2. When VIDEO Input

Connect an oscilloscope to VIDEO IN terminal (J902 on PJ-22 board) and confirm that the amplitude of the video sync signal is approximately 0.3V, that the video block amplitude is approximately 0.7V, that the burst signal amplitude is approximately 0.3V with flat characteristics, and that the signal level ratio between the burst signal and "Red" signal is 0.30:0.66. The video signal (color bars) used for VTR block adjustment are shown in Fig. 9-3.

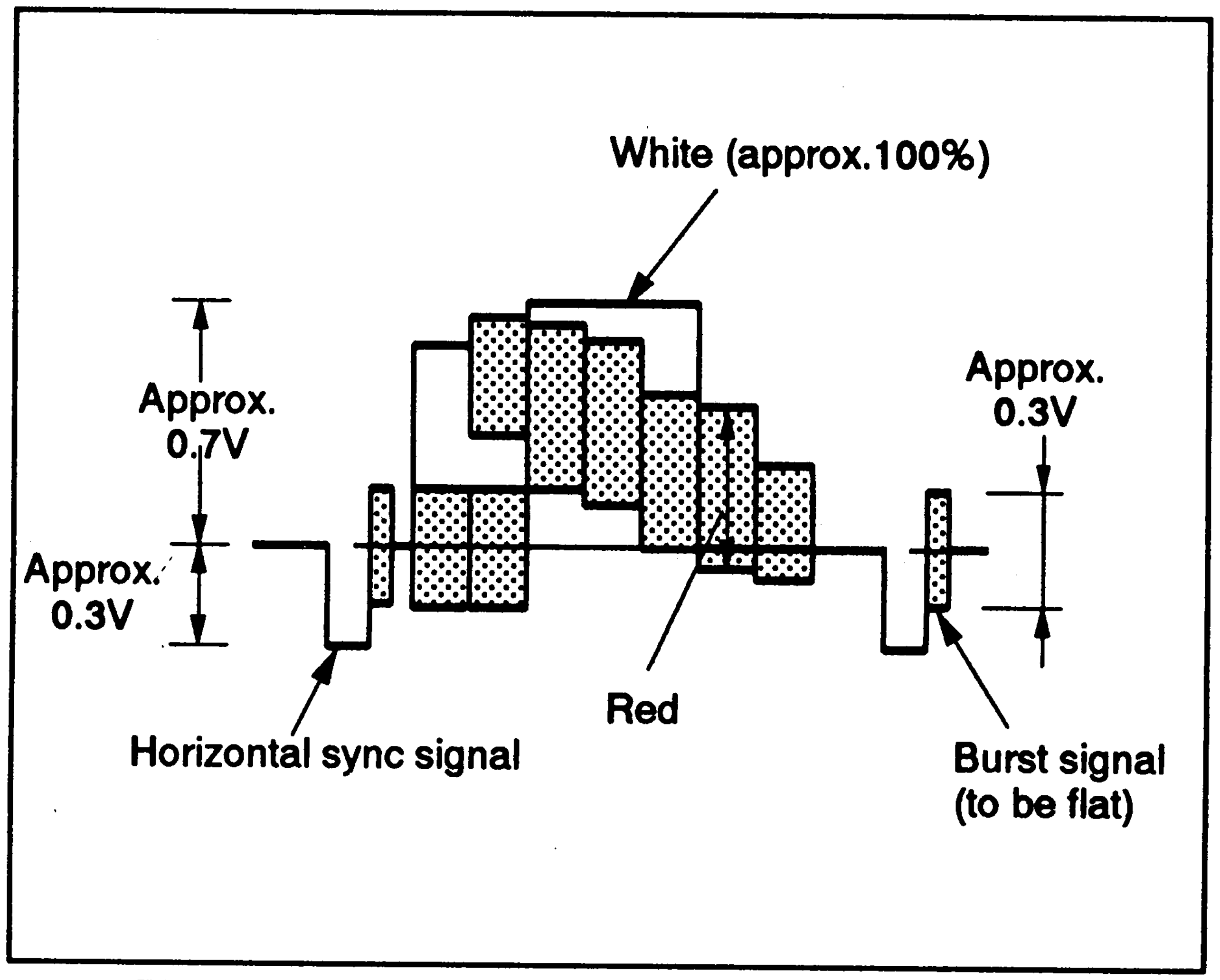

White (approx.100%)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Horizontal sync signal
Red
Burst signal (to be flat)

Fig. 9-3. Color bar signal of pattern generator

9-1-5. Alignment Tape

The following alignment tapes are available.

Use the tape indicated in the signal column; however, in case there is no type indication in the signal column, use any tape for operation check.

Name	REC mode	Type	Speed	Contents		Usage
				Video area	PCM area	
Tracking (WR5-1NP)	L	MP	SP	CH2: 1 MHz tape pass adjustment signal Switching position adjustment marker (CH1: 9 MHz)		Tape pass adjustment Switching position adjustment
Video Frequency Characteristics (WR5-7NE)	E	ME	SP	RF sweep: 0 to 15 MHz Markers: 2, 4.5, 7, 8.5, 10 MHz		Frequency characteristics adjustment
Operation Check (WR5-4NSP or WR5-5NSP)	L	MP	SP	• Video signal Color bar: 4 min. Monoscope: 4 min. • Audio signal (AFM) 400 Hz, 60% modulation	• Audio signal (PCM) Monoscope: 20 Hz 20sec } Repeat four times. 400 Hz 20sec 14 kHz 20sec Color bar: 1 kHz 4 min.	Operation check
WR5-8NSE	E	ME	SP		• Audio signal (PCM) 400 Hz	
WR5-4NL	L	MP	LP	• Video signal Color bar: 4 min. Monoscope: 4 min. • Audio signal (AFM) 400 Hz, 60% modulation		
WR5-8NLE	E	ME	LP		• Audio signal (PCM) 400 Hz	
AFM stereo operation check (WR5-9NS)	L	MP	SP	• Video signal Color bar: 4 min. Monoscope: 4 min. • Audio signal (AFM) L ch: 400 Hz L+R: 1.5 MHz ± 60 kHz R ch: 1 kHz L–R: 1.7 MHz ± kHz	• Audio signal (PCM) Monoscope: 20 Hz 20 sec } Repeat four times. 400 Hz 20 sec 14 kHz 20 sec Color bar: 1 kHz 4 min.	AFM stereo PB matrix adjustment

Note: Recording mode

L ················Conventional mode

E ················Hi8 (high band) mode

Tape type

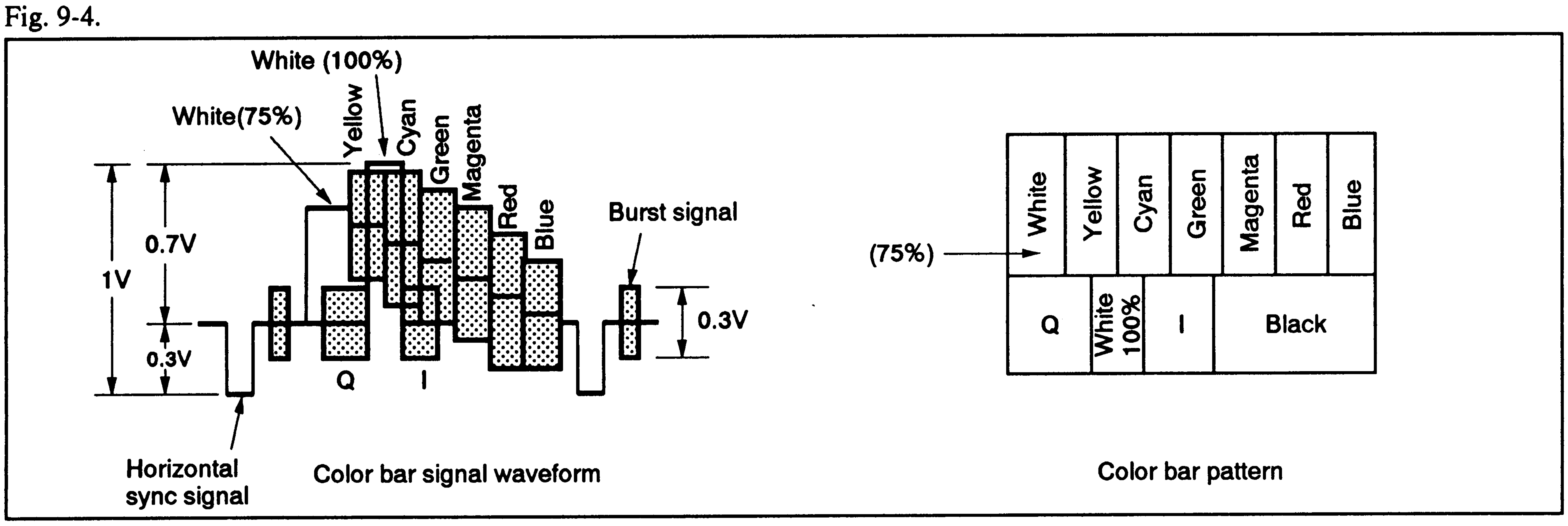
MP ··············Applied type metal tape

ME··············Evaporated type metal tape

Table 9-1.

75% color bar signal recorded on an alignment tape is shown in Fig. 9-4.

Note: Measured at VIDEO OUT terminal (75Ω termination).



Color bar signal waveform

Color bar pattern

Fig. 9-4. Alignment tape color bar signal

9-1-6. I/O Level Impedance

Video input Pin jack
Input signal: 1 Vp-p, 75Ω unbalanced, negative sync
Video output Pin jack
Output signal: 1 Vp-p, 75Ω unbalanced, negative sync
S video input: (4-pin mini DIN)
Luminance signal: 1 Vp-p, 75Ω unbalanced, negative sync
Chroma signal: 0.286 Vp-p, 75Ω unbalanced
S video output: (4-pin mini DIN)
Luminance signal: 1 Vp-p, 75Ω unbalanced, negative sync
Chroma signal: 0.286 Vp-p, 75Ω unbalanced
Audio input Pin jack
Input level: –7.5 dBs (0 dBs=0.775 Vrms)
Audio output Pin jack
Specified output: –7.5 dBs (when 47 kΩ loaded)
Output impedance: Less than 2.2 kΩ

9-1-7. Recording Mode (E Mode/L Mode) Selection

Recording mode (E mode/L mode) of this unit can be selected as follows; however, the playback mode (E mode/L mode) can be selected automatically according to the recording mode of a tape to be used.

Hi8 switch (L mode/E mode selection switch) (S770 on DK-3 board)	**Tape**	**Recording mode**
AUTO (E mode)	ME	E
	MPHG	
	MP	L
OFF (L mode)	ME	L
	MPHG	
	MP	

Table 9-2.

9-1-8. Service Modes

This unit is equipped with service modes for adjustment and operation checking. There are following two service modes, and switching between them is by connection between GND and Pin (B6) of the check point array on the VC-55 board.

Service Mode	**Function**	**Connection between GND and Pin (B6) of check point array**
Status indication mode	For video block adjustment, operation checking	Open (no connection)
EVR adjustment mode	For adjustment of camera block	Shorted

(Refer to "Camera Block Adjustment" for details on the EVR adjustment mode.)

Note: When using the service mode, activating the camera block is required.

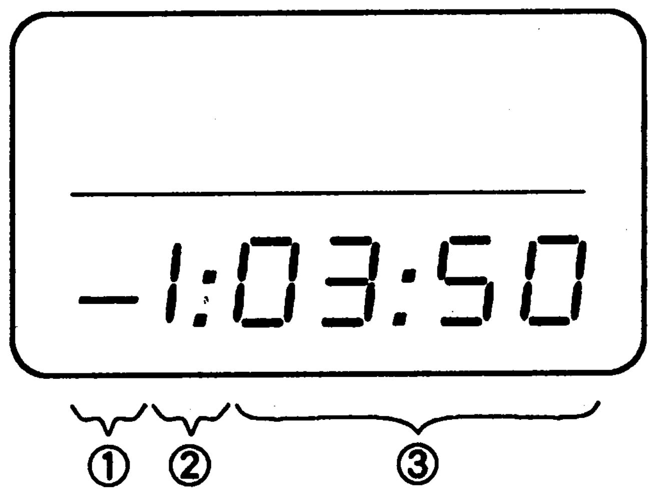
1. Invoking service mode

1) Connect the adjustment remote commander to REMOTE terminal (J813 on VJ-6 board) of the main unit.
2) Set HOLD switch of the adjustment remote commander to HOLD position (SERVICE position).

The status indication mode is invoked by the above operation. (To select the EVR adjustment mode, connection between Pin (B6) of the check point array and GND is required.)

2. Indication on adjustment remote commander LCD in status indication mode

Note: In categories 1 through 4, the same information is displayed on the EVF screen and on the monitor screen (when the data screen is ON).



①...... Minus segment flashes to indicate that the service mode has been invoked.
②...... Indicates service mode category.
③...... Indicates battery voltage, LAST EMG, PRESET EMG, or MODE SW CODE according to current category.

Fig. 9-5.

3. Category selection and indication in each category

Select the desired category with FF button of the adjustment remote commander. There are four categories (1 through 4) and the indications are different for each.

Category	Indication on LCD
1	A/D conversion value for battery voltage (decimal indication) Note 1
2	LAST EMG (last emergency) Note 2 Refer to "Service Mode Error Indications".
3	PRESENT EMG (current emergency) Note 3 Refer to "Service Mode Error Indications".
4	MODE SW CODE (mechanism status)

00:00	EJECT
00:01	I.A
00:02	UNLOAD
00:03	I.B
00:04	STOP (threading completed)
00:05	I.C
00:06	RP(REC, PB, FF, REW, CUE, REVIEW, PAUSE)
00:AA	Mode switch error

Notes: 1) Indicates a value proportional to the battery voltage.
2) LAST EMG indicates the error occurred last.
3) If two or more errors are occurred during using the unit, PRESENT EMG indicates the status sequentially by FF button (EVR No. NEXT).

Table 6-3.

• Service mode error indication

Error Status	PRESENT EMG Indication	LAST EMG Indication
No error	00 : 00	00 : 00
Loading motor	00 : 01	00 : 01
REEL FG error during unthreading	00 : 02	00 : 02
REEL FG error not during unthreading	00 : 03	00 : 03
Capstan error	00 : 04	00 : 04
DRUM PG error (0) when starting drum	00 : 05	00 : 05
DRUM PG error (1) when starting drum	01 : 05	01 : 05
DRUM PG error (2) when starting drum	02 : 05	02 : 05
No DRUM PG (0) when starting drum	00 : 06	00 : 06
No DRUM PG (1) when starting drum	01 : 06	01 : 06
No DRUM PG (2) when starting drum	02 : 06	02 : 06
DRUM FG error (0) when drum stationary	00 : 07	00 : 07
DRUM FG error (1) when drum stationary	01 : 07	01 : 07
DRUM FG error (2) when drum stationary	02 : 07	02 : 07
No DRUM PG (0) when drum stationary	00 : 08	00 : 08
No DRUM PG (1) when drum stationary	01 : 08	01 : 08
No DRUM PG (2) when drum stationary	02 : 08	02 : 08
Phase error (0) when drum stationary	00 : 09	00 : 09

(1) During tape threading
(2) During tape unthreading
(0) Others

Table 9-4.

4. Releasing service mode

The service mode is released by returning HOLD switch of the adjustment remote commander to NORMAL position or by disconnecting the adjustment remote commander from REMOTE terminal.

9-1-9. Test Modes

This unit has three test modes which are invoked by connecting the terminals of CN214 on the FD-13 board with a diode (1SS119 or its parity).

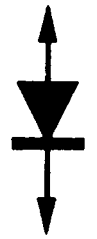
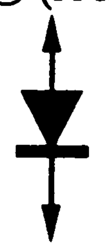
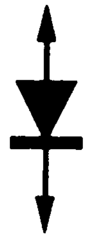
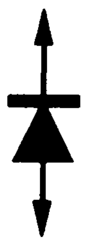
Test Mode	Connection of CN214 on FD-13 Board	Function
1	Pin ③ (K IN 5)  Pin ② ($\overline{\text{K OUT 9}}$)	1. Switching position adjustment is possible. 2. Error detection disabled.
2	Pin ① (K IN 6)  Pin ② ($\overline{\text{K OUT 9}}$)	1. Battery voltage A/D converted value is displayed on LCD. (When recording) (Same as the service mode category 1.) **Note**: Playback picture is not be displayed.
3	Pin ③ (K IN 5)  Pin ② ($\overline{\text{K OUT 9}}$)  Pin ① (K IN 6)	1. For tape path adjustment Tracking shift

Table 9-5.

9-2. POWER SUPPLY CHECKS

9-2-1. Power Supply Voltage Check (DC-DC converter 1)

Mode	E-E
Measurement Instrument	Digital voltmeter
SS 5V check	
Measurement Point	Pin ① of CN010, Pin ⑦ of CN011
Specified Value	4.90 ± 0.15 Vdc
VI 5V check	
Measurement Point	Pins ③ and ④ of CN010
Specified Value	4.85 ± 0.15 Vdc
AUDIO 5V check	
Measurement Point	Pin ⑧ of CN010, Pin ④ of CN011
Specified Value	4.90 ± 0.15 Vdc

Checking method:
1) Each power supply voltage meets the specified value.

9-2-2. Power Supply Voltage Check (DC-DC converter 2)

Mode	E-E
Measurement Instrument	Digital voltmeter
AUDIO 8V check	
Measurement Point	Pin ① of CN004
Specified Value	8.0 ± 0.15 Vdc
EVF 5V check	
Measurement Point	Pin ⑤ of CN001
Specified Value	4.95 ± 0.15 Vdc
LINCS 5.7V check	
Measurement Point	Pin ④ of CN003
Specified Value	5.7 ± 0.3 Vdc4.90 ± 0.15 Vdc

Checking method:
1) Each power supply voltage should meet the specified value.

Mode	Playback
Measurement Instrument	Digital voltmeter
DM 4.5V	
Measurement Point	Pin ① of CN002
Specified Value	4.40 ± 0.15 Vdc

Checking method:
1) DM4.5V power supply meets the specified value.

9-3. SYSTEM CONTROL SYSTEM ADJUSTMENTS

9-3-1. Clock Precision Adjustment (SS-95 Board)

Mode	E-E
Measurement Point	Pin (69) of IC101 (check land "X'tal")
Measuring Instrument	Frequency counter
Adjusting Element	CT101
Specified Value	512.004 ± 0.001 Hz

Adjusting method:

1) Adjust CT101 to 512.004 ± 0.001 Hz.

9-3-2. Battery Down Adjustment (SS-95 Board)

Note: Connect the camera block before adjustment.

Mode	E-E
Measurement Point	Confirm on the monitor TV screen or LCD indication
Measuring Instrument	
Adjusting Element	RV001
Specified Value	2:83 to 2:85

Note: If the category 1 is selected by the adjustment remote commander, diode connection (category 1 setting) is not required. (Refer to "Service Mode".)

Connections:

1) Connect a regulated power supply and digital voltmeter as shown in Fig. 9-6.

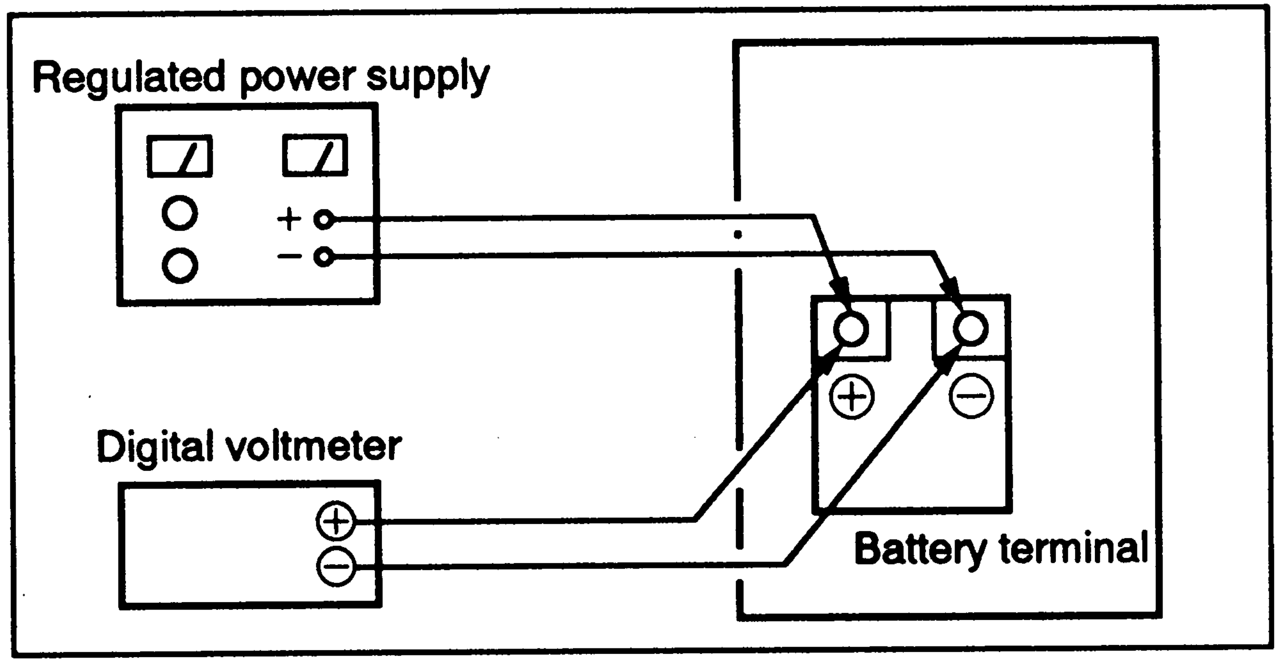


Fig. 9-6.

2) Connect CN214 on the FD-13 board with a diode (1SS119 or parity). (test mode 2)

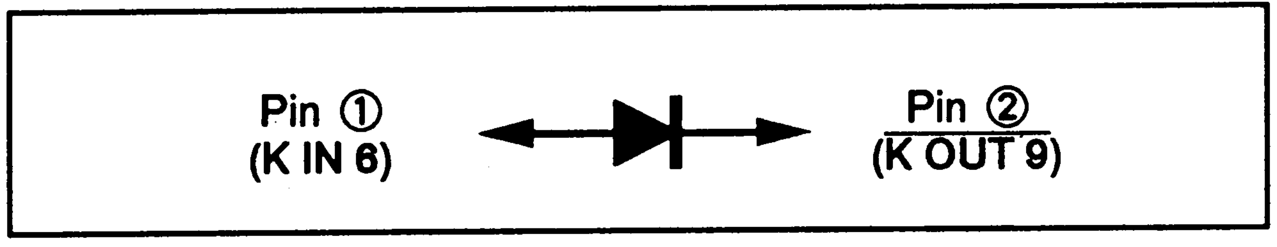


Fig. 9-7.

Adjusting method:

1) Set the power supply voltage to 5.65 ± 0.01 Vdc.
2) Press DATA SCREEN button (S741 on VK-2 board) to display a battery voltage on the monitor screen.
3) Adjust RV001 so that the LCD indication of the adjustment remote commander is "2:83" or "2:85". (Turning point from 83 to 85.)

9-3-3. Battery Down Confirmation

Note: Connect the camera block before adjustment.

Mode	Camera REC
Subject	All black (cover lens with black cap)
Measurement Point	Confirmation on the LCD indication on the FD-13 board
Measuring Instrument	
Specified Value	Battery pre-end indication at 5.85 ± 0.01 Vdc or at 5.78 ± 0.01 Vdc. (*1) Battery pre-end indication at 5.67 ± 0.01 Vdc. (*2)

*1: 🔋 mark on the LCD blinks slowly.
*2: 🔋 mark on the LCD blinks rapidly.

Connections:

1) Connect a regulated power supply and digital voltmeter as shown in Fig. 9-6.
2) Remove the diode used for battery down adjustment.

Checking method:

1) Set the power supply voltage to 6.5 ± 0.1 Vdc and select the camera REC mode.
2) Slowly lower the power supply voltage to 5.85 ± 0.1 Vdc.
3) Confirm that the battery pre-end indication is made on the LCD. If not, slowly lower the power supply voltage to 5.78 ± 0.01 Vdc and reconfirm.
4) Slowly lower the power supply voltage to 5.78 ± 0.01 Vdc.
5) VTR becomes shut-off and confirm that the battery pre-end indication (*2) is made.

9-4. SERVO SYSTEM ADJUSTMENTS

9-4-1. PWM Oscillating Frequency Adjustment (SS-95 Board)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin ⑩ of IC204
Measuring Instrument	Frequency counter
Adjusting Element	RV201
Specified Value	480 ± 2 kHz

Adjusting method:

1) Adjust RV201 to 480 ± 2 kHz.

9-4-2. Capstan FG Adjustment (SS-95 Board)

Mode	Recording (LP mode) $^{\mathrm{Note}}$
Signal	Color bar
Measurement Point	TP200 (Pin ⑧ of IC202: CAP VS)
Measuring Instrument	Oscilloscope
Adjusting Element	RV200
Specified Value	Minimum level fluctuation

Note: Connect Pins ⑥ and ④ of CN206 on the FD-13 board and select the LP recording mode.

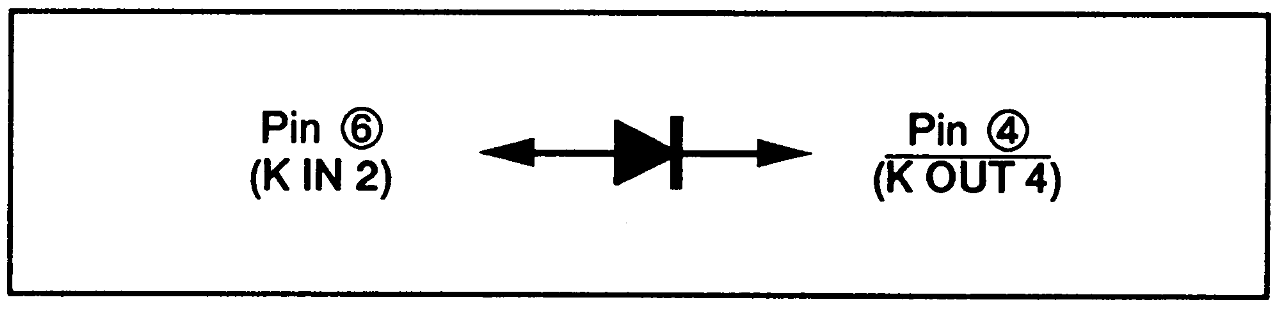


Fig. 9-8.

Adjusting method:

1) Adjust RV200 so that the level fluctuation of CAP VS signal becomes minimum.

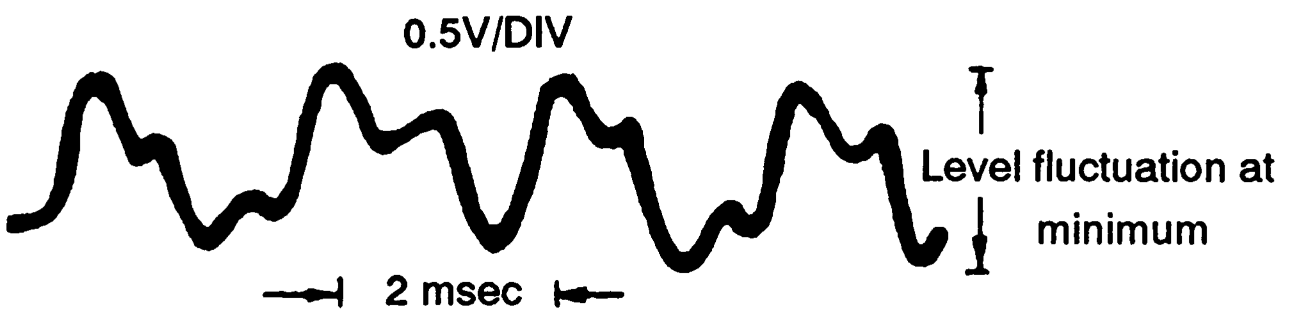


Fig. 9-9.

9-4-3. Switching Position Adjustment (SS-95 Board)

Mode	Playback
Signal	Alignment tape for tracking adjustment (WR5-1NP)
Measurement Point	CH1: MR-19 board Pin ④ of CN802 (RF CH 2) CH1: MR-19 board Pin ② of CN802 (RF SWP)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002
Specified Value	0 ± 5 μsec

Connections:

1) Connect CN214 on the FD-13 board with a diode (1SS119 or parity). (test mode 1)

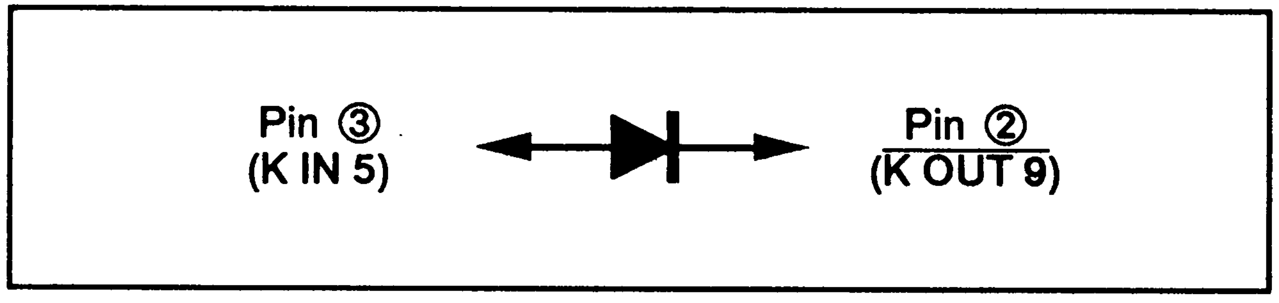


Fig. 9-10.

Adjusting method:

1) Adjust RV002 so that RF CH 2 waveform marker coincides with RF SWP waveform rising edge.

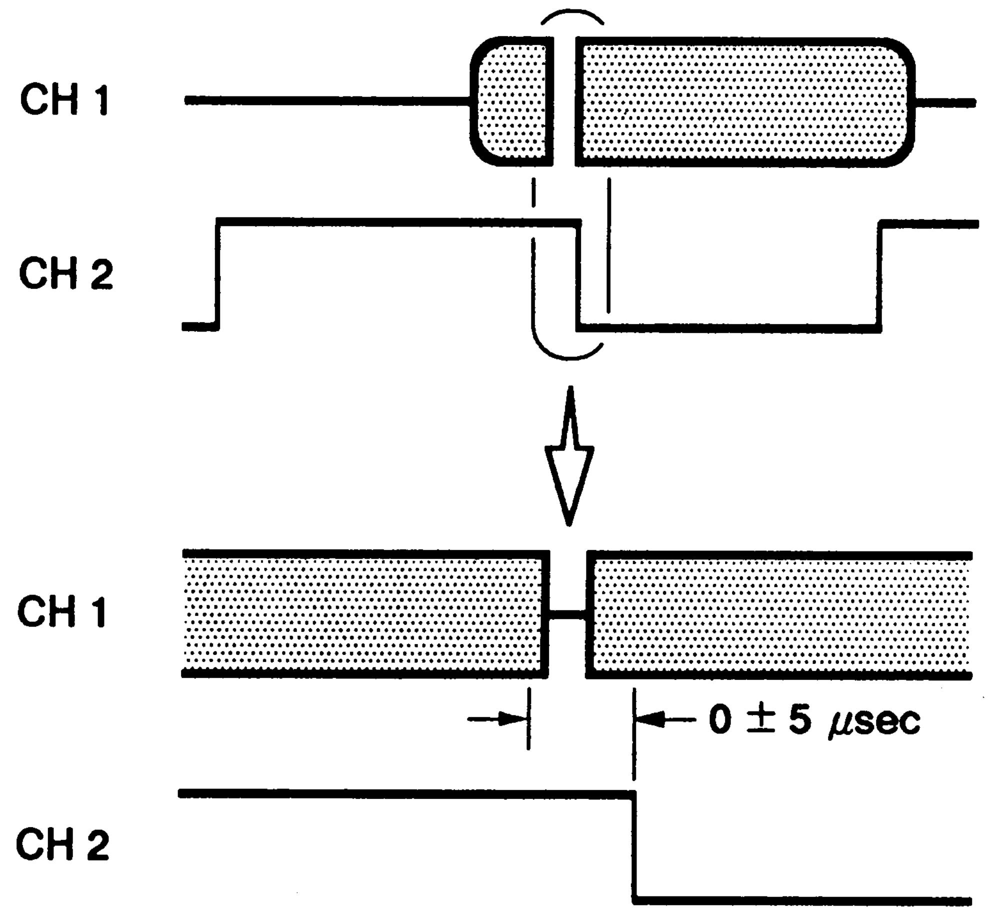


Fig. 9-11.

9-5. VIDEO SYSTEM ADJUSTMENT

The adjustment of the video system should in principle follow the adjustment procedure outlined below. The color video signal supplied from the pattern generator is utilized as the video input signal for video system adjustment in the recording mode. Make sure that the signal matches the specifications given in Fig. 9-3 and "Input Signal Confirmation".

Perform adjustment under following switch settings.

1. DIGITAL EFECT switch (S761 on DK-3 board)......OFF
2. Hi8 switch (S770 on DK-3 board)......AUTO
3. EDIT switch (S771 on DK-3 board)......OFF

[Adjustment procedure]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) Crystal oscillator fo adjustment
4) Y/C separation adjustment
5) Y comb filter adjustment
6) SYNC AGC and loop gain adjustment
7) VI-66 board VIDEO OUT level adjustment
8) PB emphasis adjustment
9) L mode PB Y level adjustment
10) E mode PB Y level adjustment
11) L mode Y FM carrier frequency, deviation adjustment
12) L mode Y FM carrier frequency, deviation adjustment
13) 378fH VCO adjustment
14) Chroma emphasis fo adjustment
15) Carrier balance adjustment
16) Recording current adjustment
17) VIDEO OUT level adjustment
18) Y OUT level adjustment
19) C OUT level adjustment
20) Character generator fo adjustment
21) DDS character position adjustment

9-5-1. Playback Frequency Characteristics Adjustment (MR-19 Board)

Note: The adjusting element for CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape for frequency characteristics adjustment (WR5-7NE)
Measurement Point	Pin ③ of CN802 [Pin ④] External trigger: Pin ② (RF SWP) of CN802 Trigger slope: +, [–]
Measuring Instrument	Oscilloscope
Adjusting Element	RV802 [RV803]
Specified Value	When supposing the 4.5 MHz signal level as 3, 8.5 MHz signal level is 2 ± 0.2.

Adjusting method:

1) When supposing the 4.5 MHz signal level as 3, adjust RV802 [RV803] so that the 8.5 MHz signal level is 2 ± 0.2.

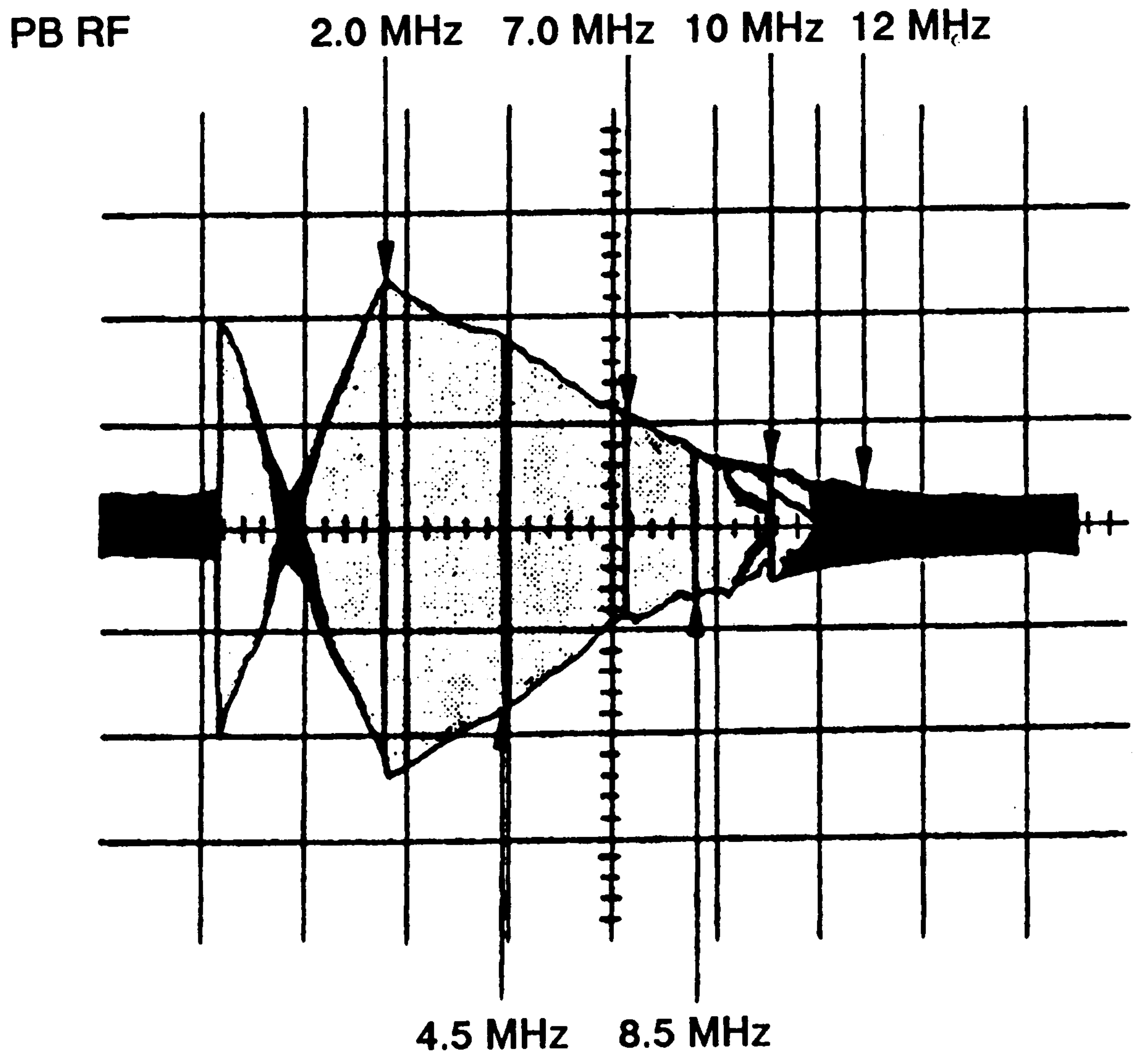


Fig. 9-12.

9-5-2. Flying Erase Check (MR-19 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	TP804 (Pin ⑭ of CN801)
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: 8 ± 0.5 MHz Voltage: 7.0 ± 1.0 Vp-p

Checking method:

1) Insert a MP type cassette tape and then select the recording mode.
2) Confirm that the oscillation frequency is 8 ± 0.5 MHz and the oscillation voltage is 7.0 ± 1.0 Vp-p.

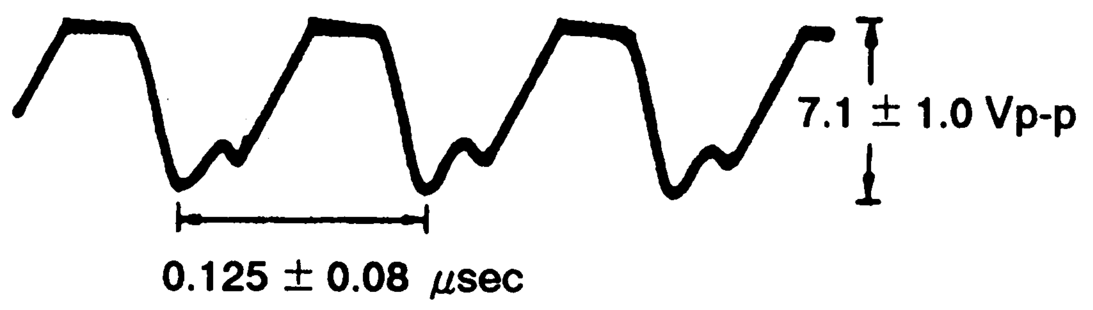


Fig. 9-13.

9-5-3. Crystal Oscillator fo Checking (VI-66 Board)

Mode	Playback
Signal	Alignment tape: For operation check
Measurement Point	Pin ⑭ of IC602
Measuring Instrument	Frequency counter
Adjusting Element	CV601
Specified Value	3579545 ± 30 Hz

Note: Connect the frequency counter through a buffer having high impedance (approx. 10MΩ) and low capacitance (less than 10 pF).

Checking method:

1) Adjust CV601 to 3579545 ± 30 Hz.

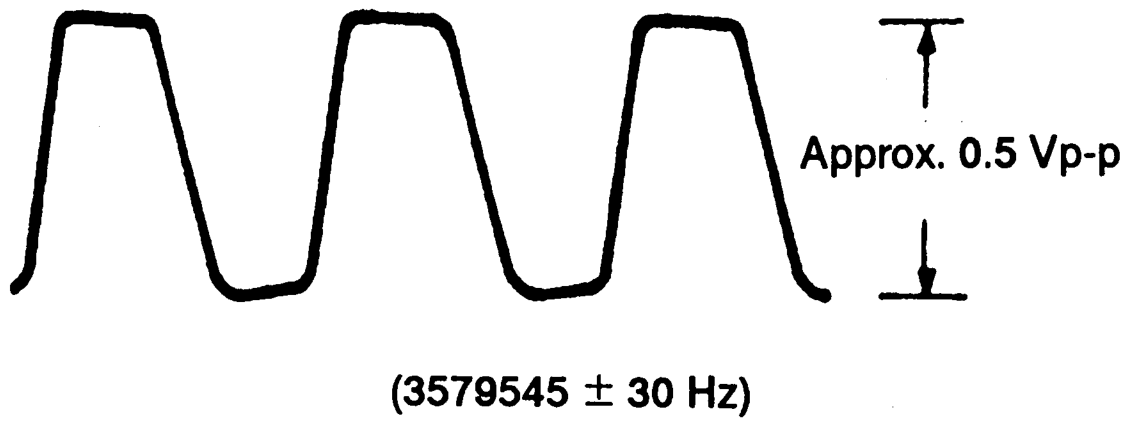


Fig. 9-14.

9-5-4. Y/C Separation Adjustment (HD-8/VI-66 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement Point	Pin ㉖ of HD-8 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 on HD-8 board LV601 on VI-66 board
Specified Value	Minimum residual chroma component

Adjusting method:

1) Adjust RV202 (HD-8 board) and LV601 (VI-66 board) alternately so that the residual chroma component becomes minimum.

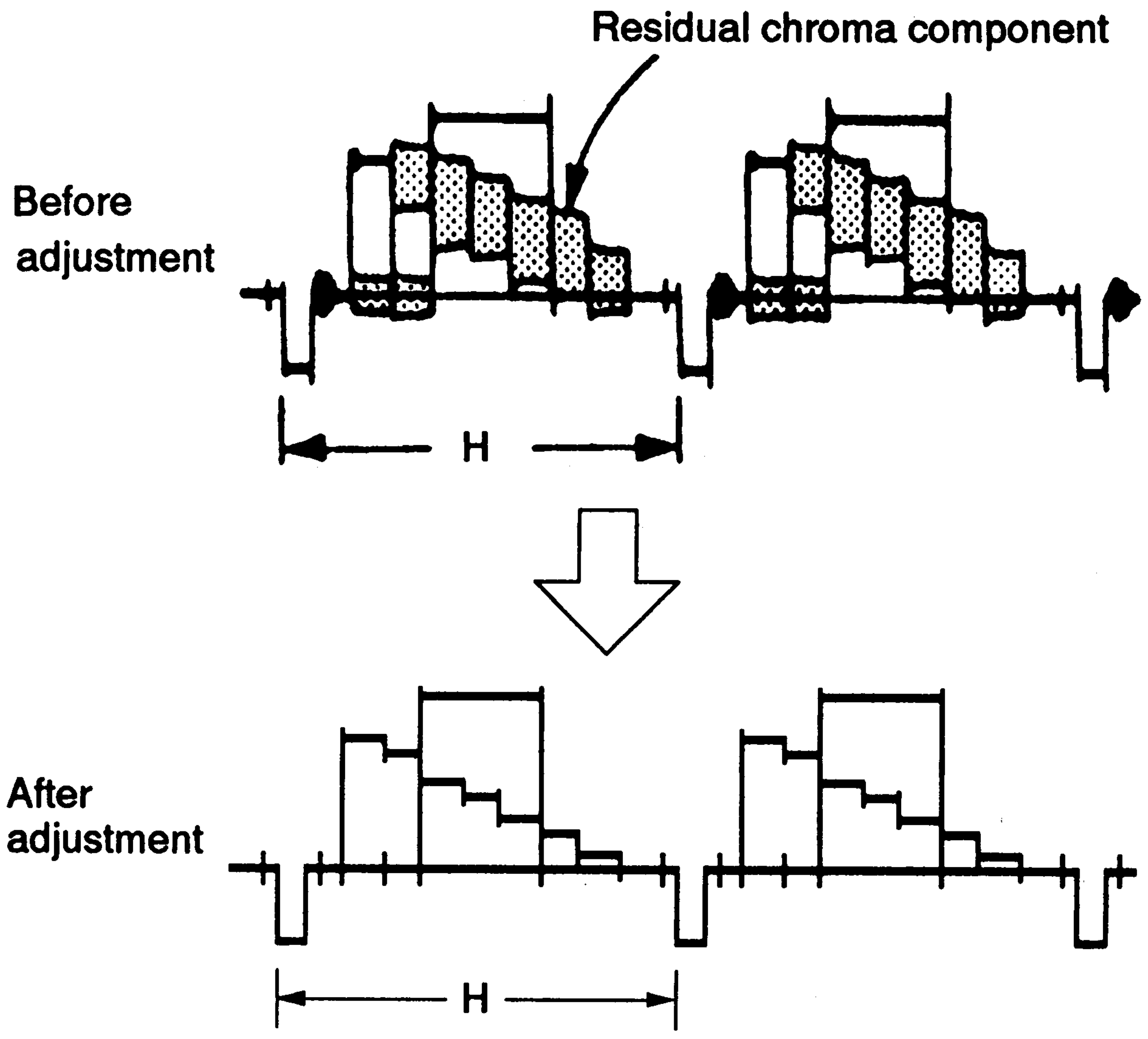


Fig. 9-15.

9-5-5. Y Comb Filter Adjustment (HD-8/VI-66 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement Point	Pin ⑨ of HD-8 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV201 on HD-8 board
Specified Value	Minimum amplitude between white (100%) and sync chip

Connections:

1) Connect a 22 kΩ resister across Pin ⑨ of HD-8 board and a 10:1 probe in series.

Adjusting method:

1) Adjust RV201 so that the amplitude between white (100%) and the sync chip becomes minimum.

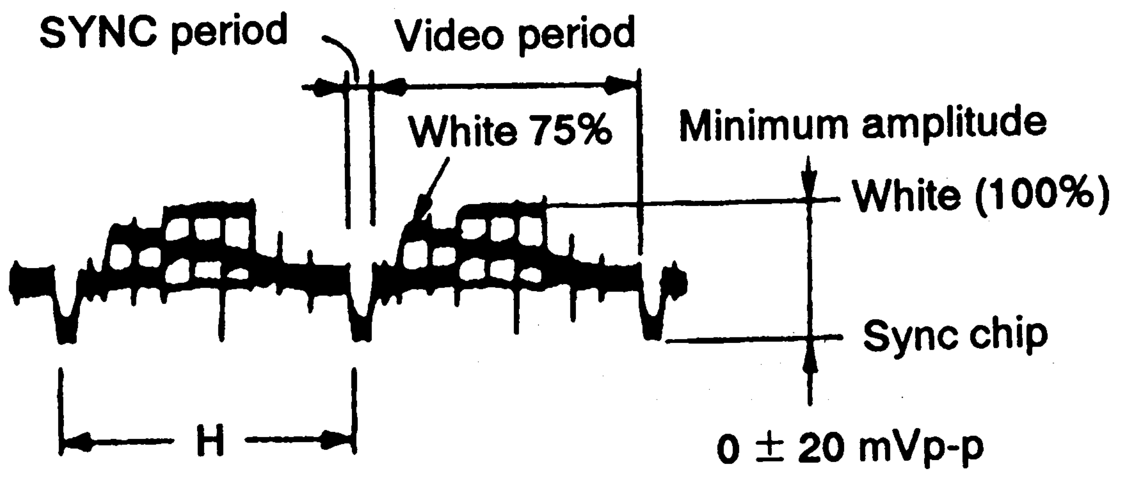

SYNC period
Video period
White 75%
Minimum amplitude
White (100%)
Sync chip
H
0 ± 20 mVp-p

Fig. 9-16.

9-5-6. SYNC AGC and Loop Gain Adjustment

1. SYNC AGC adjustment (VI-66 board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement Point	Pin ㊲ of IC410
Measuring Instrument	Oscilloscope
Adjusting Element	RV409
Specified Value	0.50 ± 0.01 Vp-p

Adjusting method:

1) Adjust RV409 to 0.50 ± 0.01 Vp-p.

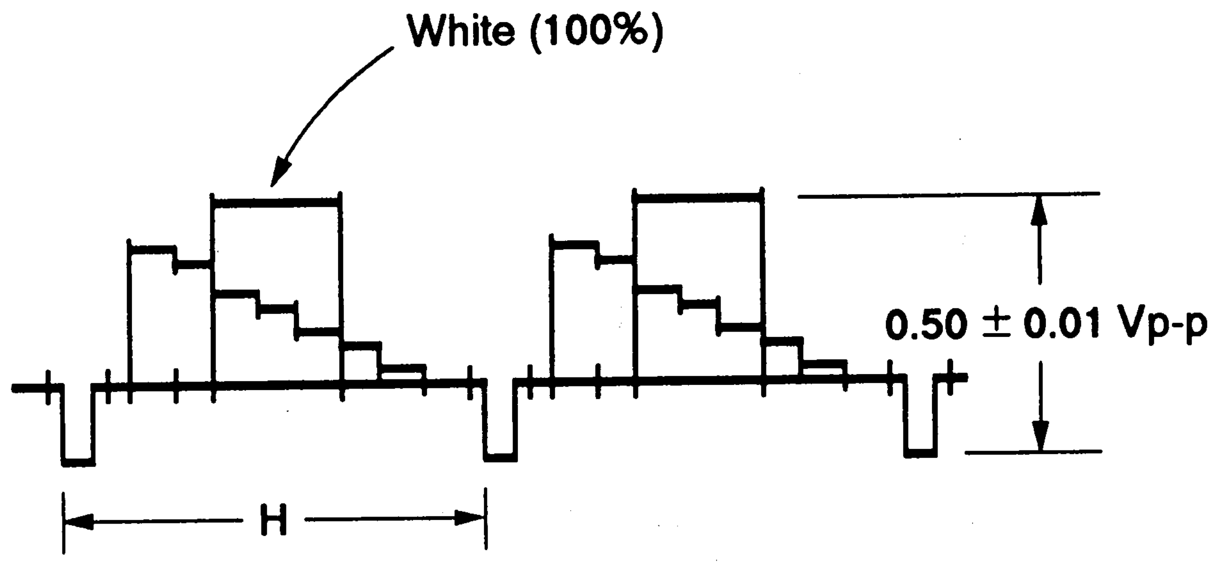

White (100%)
0.50 ± 0.01 Vp-p
H

Fig. 9-17.

2. Loop gain adjustment (VI-66 board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement Point	Pin ㊴ of IC410 (Pin ㉚ of HD-8 board)
Measuring Instrument	Oscilloscope
Adjusting Element	RV401
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method:

1) Adjust RV410 to 0.50 ± 0.02 Vp-p.

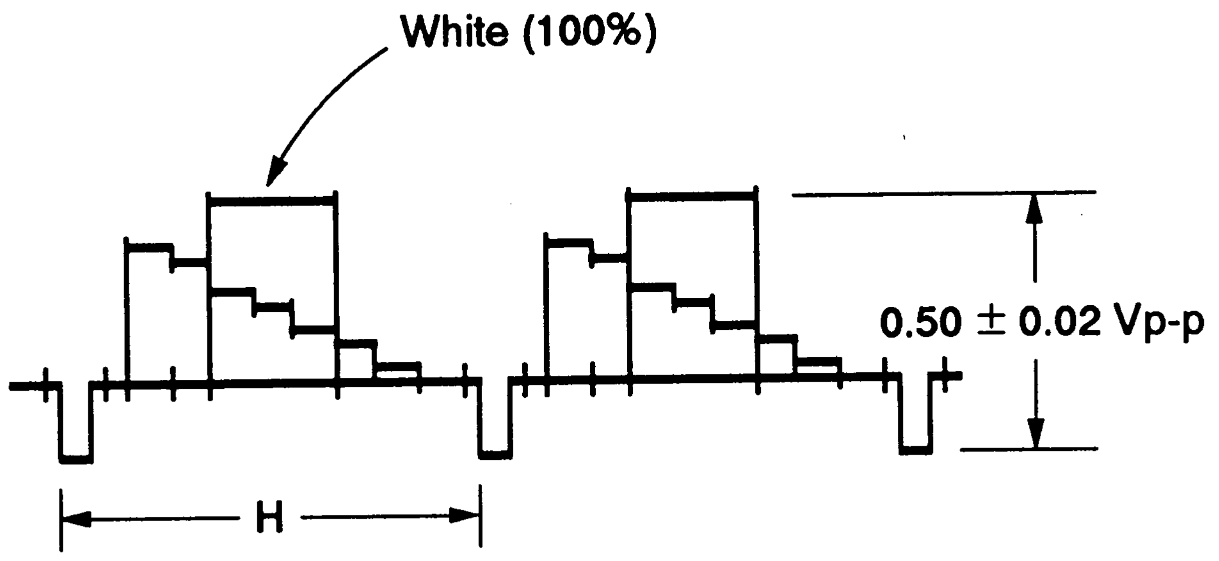

White (100%)
0.50 ± 0.02 Vp-p
H

Fig. 9-18.

9-5-7. VIDEO OUT Level Adjustment (VI-66 BOard)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement Point	Pin ② (DI IN Y) of CN406
Measuring Instrument	Oscilloscope
Adjusting Element	RV410
Specified Value	1.00 ± 0.025 Vp-p

Adjusting method:

1) Adjust RV410 to 1.00 ± 0.025 Vp-p.

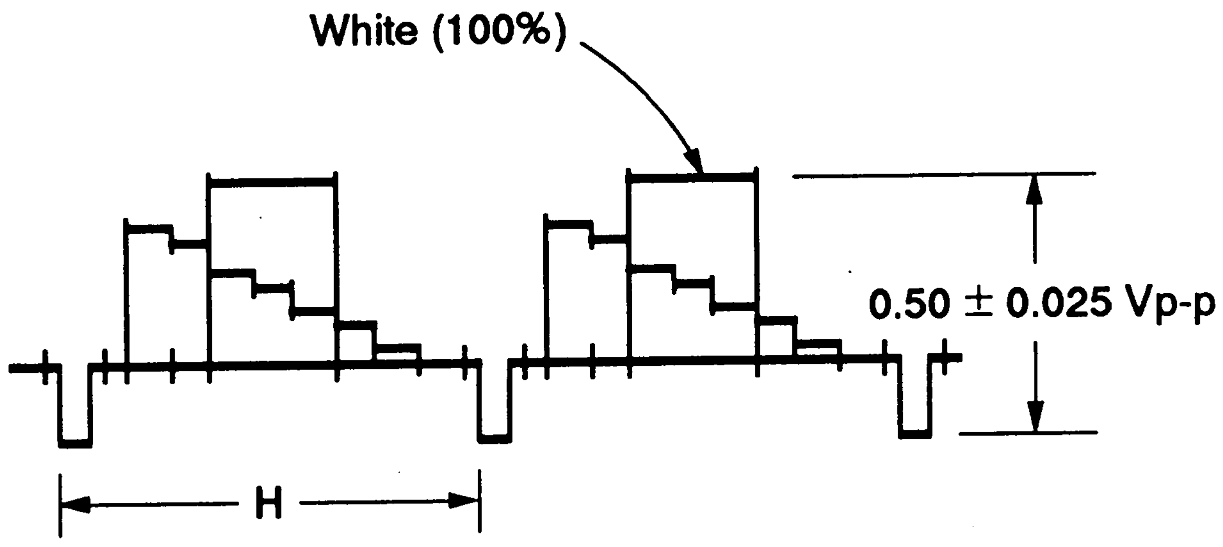

White (100%)
0.50 ± 0.025 Vp-p
H

Fig. 9-19.

9-5-8. PB Emphasis Adjustment (VI-66 Board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-5NSP or WR5-4NSP) Color bar section
Measurement Point	Pin ② (DI IN Y) of CN406
Measuring Instrument	Oscilloscope
Adjusting Element	RV408
Specified Value	Flat level: pedestal, sync chip and each luminance levels

Note: Make sure that EDIT switch (S771 on DK-3 board) is off.

Adjusting method:
1) Adjust RV408 to make flat the pedestal level, sync chip level and each luminance level.

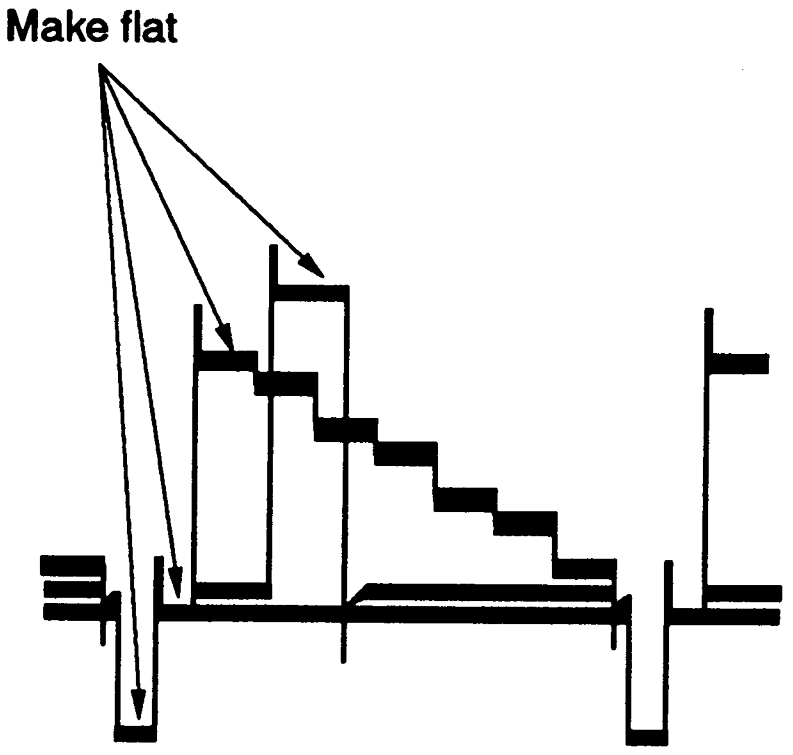


Fig. 9-20.

9-5-9. L Mode PB Y Level Adjustment (VI-66 Board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-5NSP or WR5-4NSP) Color bar section
Measurement Point	Pin ② (DI IN Y) of CN406
Measuring Instrument	Oscilloscope
Adjusting Element	RV416
Specified Value	1.02 ± 0.025 Vp-p

Note: Make sure that EDIT switch (S771 on DK-3 board) is off.

Adjusting method:
1) Adjust RV416 to 1.02 ± 0.025 Vp-p.
2) Perform "E Mode PB Y Level Adjustment".

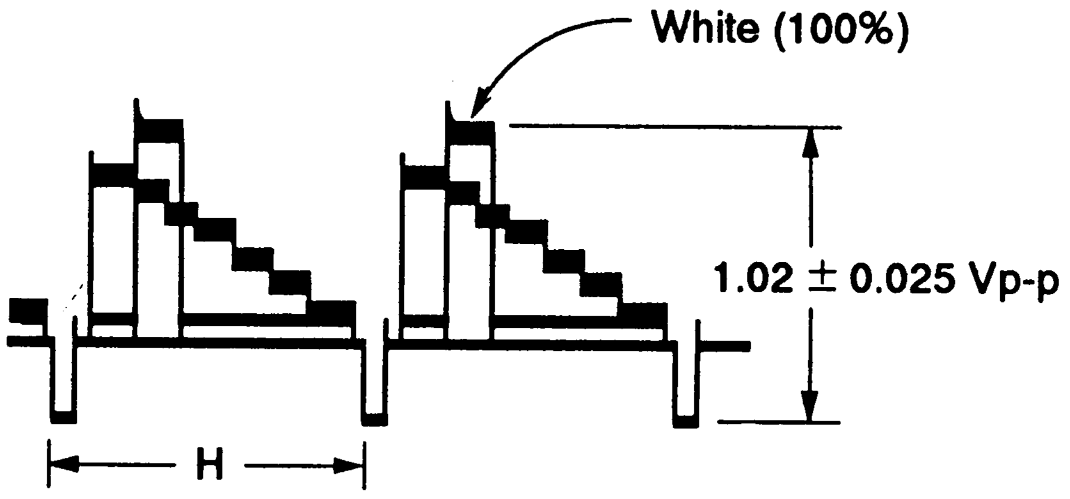


Fig. 9-21.

9-5-10. E Mode PB Y Level Adjustment (VI-66 Board)

Mode	Playback
Signal	Alignment tape: for operation check (WR5-8NSE) Color bar section
Measurement Point	Pin ② (DI IN Y) of CN406
Measuring Instrument	Oscilloscope
Adjusting Element	RV417
Specified Value	1.02 ± 0.025 Vp-p

Note: 1) Make sure that EDIT switch (S771 on DK-3 board) is off.
2) Confirm that "L Mode PB Y Level Adjustment" is completed.

Adjusting method:
1) Adjust RV417 to 1.02 ± 0.025 Vp-p.

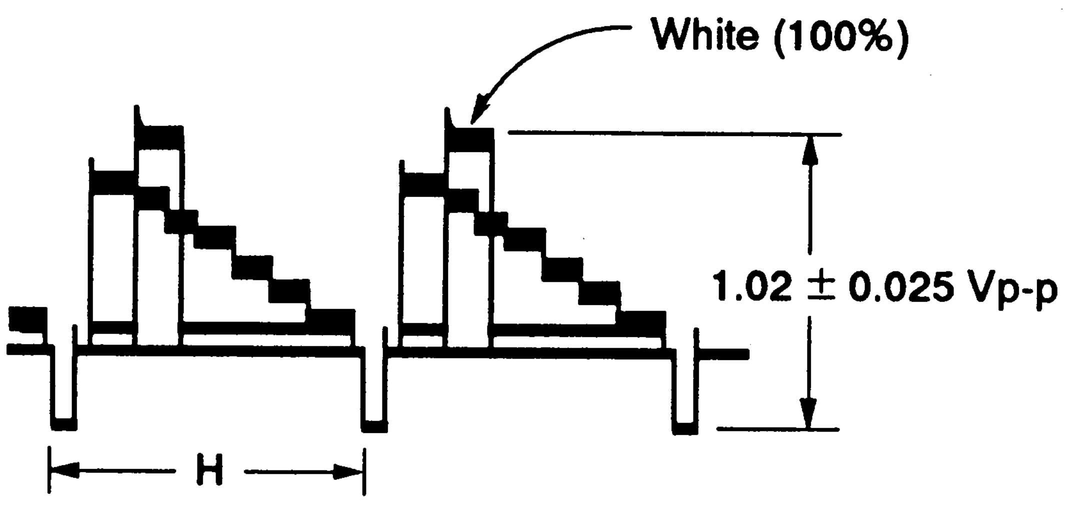


Fig. 9-22.

9-5-11. L Mode Y FM Carrier Frequency and Y FM Deviation Adjustment

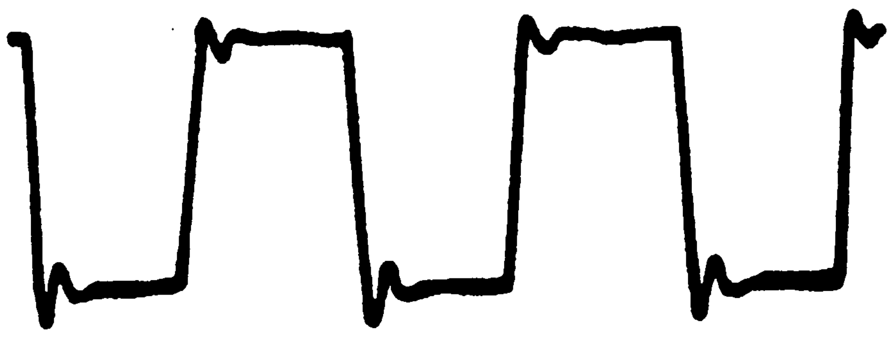
Note: After this adjustment is completed, be sure to perform "E Mode Y FM Carrier Frequency and Y FM Deviation Adjustment".

1. L mode Y FM carrier frequency adjustment (VI-66 board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ⑭ (REC Y RF) of IC409
Measuring Instrument	Frequency counter
Adjusting Element	RV406
Specified Value	4.38 ± 0.05 MHz

Adjusting method:

1) Insert a MP type cassette tape.
2) Adjust RV406 to 4.38 ± 0.05 MHz.
3) Be sure to perform "L Mode Y FM Deviation Adjustment".



4.38 ± 0.05 MHz

Fig. 9-23.

2. L mode Y FM deviation adjustment (VI-66 board)

Mode	Recording and playback
Signal	Color bar (S VIDEO)
Measurement Point	Pin ② (DI IN Y) of CN406
Measuring Instrument	Oscilloscope
Adjusting Element	RV405
Specified Value	Playback level: 1.02 ± 0.05 Vp-p

Note: 1) Confirm that "VIDEO OUT Level Adjustment", "PB Y Level Adjustment" and "L Mode Y FM Carrier Frequency Adjustment" are completed.
2) Make sure that EDIT switch (S771 on DK-3 board) is off.

Adjusting method:

1) Insert a MP type cassette tape.
2) Record the color bar signal.
3) Play back the recorded signal.
4) Check the playback output level.
   Specified value: 1.00 ± 0.05 Vp-p
5) If the specified value is not satisfied, rotate RV405 as below and then repeat steps 1) through 3).

	RV405 rotating direction
More than spec.	Counterclockwise (↺)
Less than spec.	Clockwise (↻)

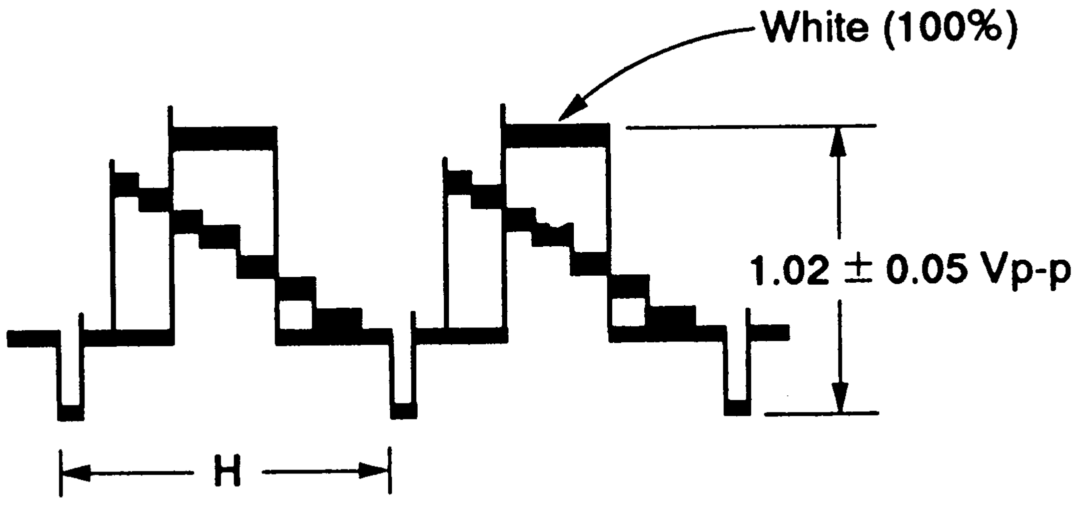


Fig. 9-24.

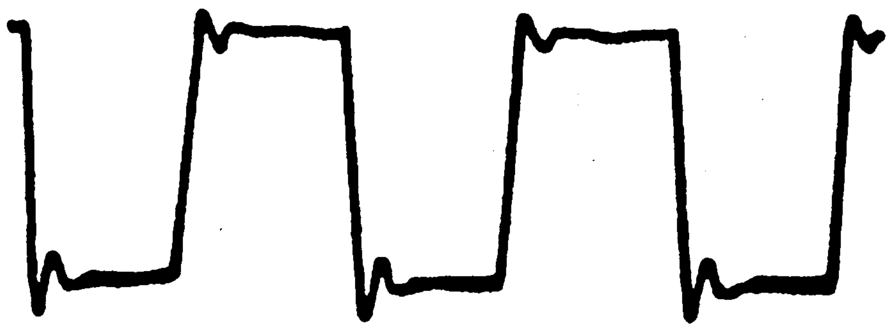
9-5-12. E Mode Y FM Carrier and Y FM Deviation Adjustment

Note: 1) Confirm that "L Mode Y FM Carrier Frequency and Y FM Deviation Adjustment" is completed.
2) Before adjustment, check below:
   1. Make sure that Hi8 switch (E mode/L mode select switch: S770 on DK-3 board) is set to AUTO position (E mode side).

1. E mode Y FM carrier frequency adjustment (VI-66 board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ⑭ (REC Y RF) of IC409
Measuring Instrument	Frequency counter
Adjusting Element	RV407
Specified Value	5.99 ± 0.05 MHz

Adjusting method:
1) Insert a ME type cassette tape.
2) Adjust RV407 to 5.99 ± 0.05 MHz.
3) Be sure to perform "E Mode Y FM Deviation Adjustment".



5.99 ± 0.05 MHz

Fig. 9-25.

2. E mode Y FM deviation adjustment (VI-66 board)

Mode	Recording and playback
Signal	Color bar (S VIDEO)
Measurement Point	Pin ② (DI IN Y) of CN406
Measuring Instrument	Oscilloscope
Adjusting Element	RV404
Specified Value	Playback level: 1.02 ± 0.05 Vp-p

Note: 1) Confirm that "VIDEO OUT Level Adjustment", "PB Y Level Adjustment" and "E Mode Y FM Carrier Frequency Adjustment".
2) Make sure that EDIT switch (S771 on DK-3 board) is off.

Adjusting method:
1) Insert a ME type cassette tape.
2) Record the color bar signal.
3) Play back the recorded signal
4) Check the playback output level.
   Specified value: 1.00 ± 0.05 Vp-p
5) If the specified value is not satisfied, rotate RV404 as below and then repeat steps 1) through 3).

	RV404 rotating direction
More than spec.	Counterclockwise (↺)
Less than spec.	Clockwise (↻)

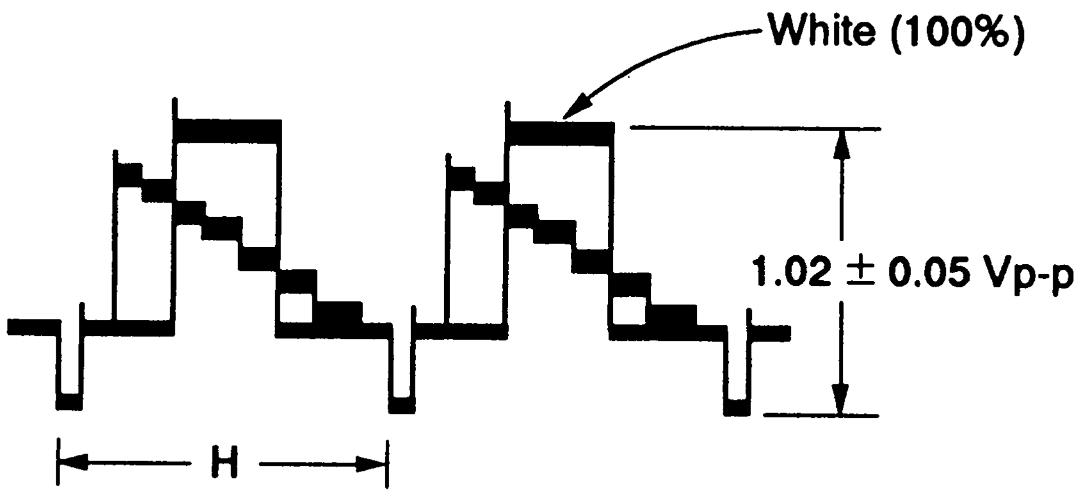


Fig.9-26.

9-5-13. 378 fH VCO Adjustment (VI-66 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ㉖ of IC602
Measuring Instrument	Digital voltmeter
Adjusting Element	RV602
Specified Value	3.0 ± 0.4 Vdc

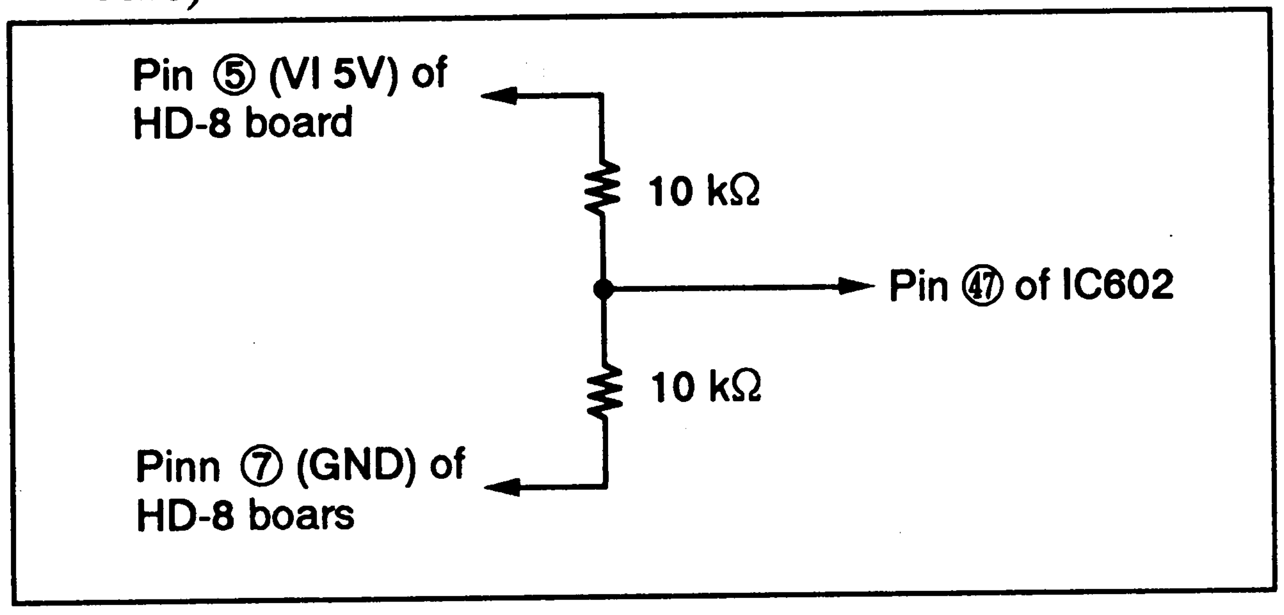
Adjusting method:
1) Adjust RV602 to 3.0 ± 0.4 Vdc.

9-5-14. Chroma Emphasis Adjustment (VI-66 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement Point	R612 terminal (open side) (See Fig. 9-28.)
Measuring Instrument	Oscilloscope
Adjusting Element	FL603
Specified Value	Minimum chroma signal fo component

Connections:

1) Connect as shown below and input 2.5 Vdc to Pin ㊼ (ACC ADJ) of IC602.

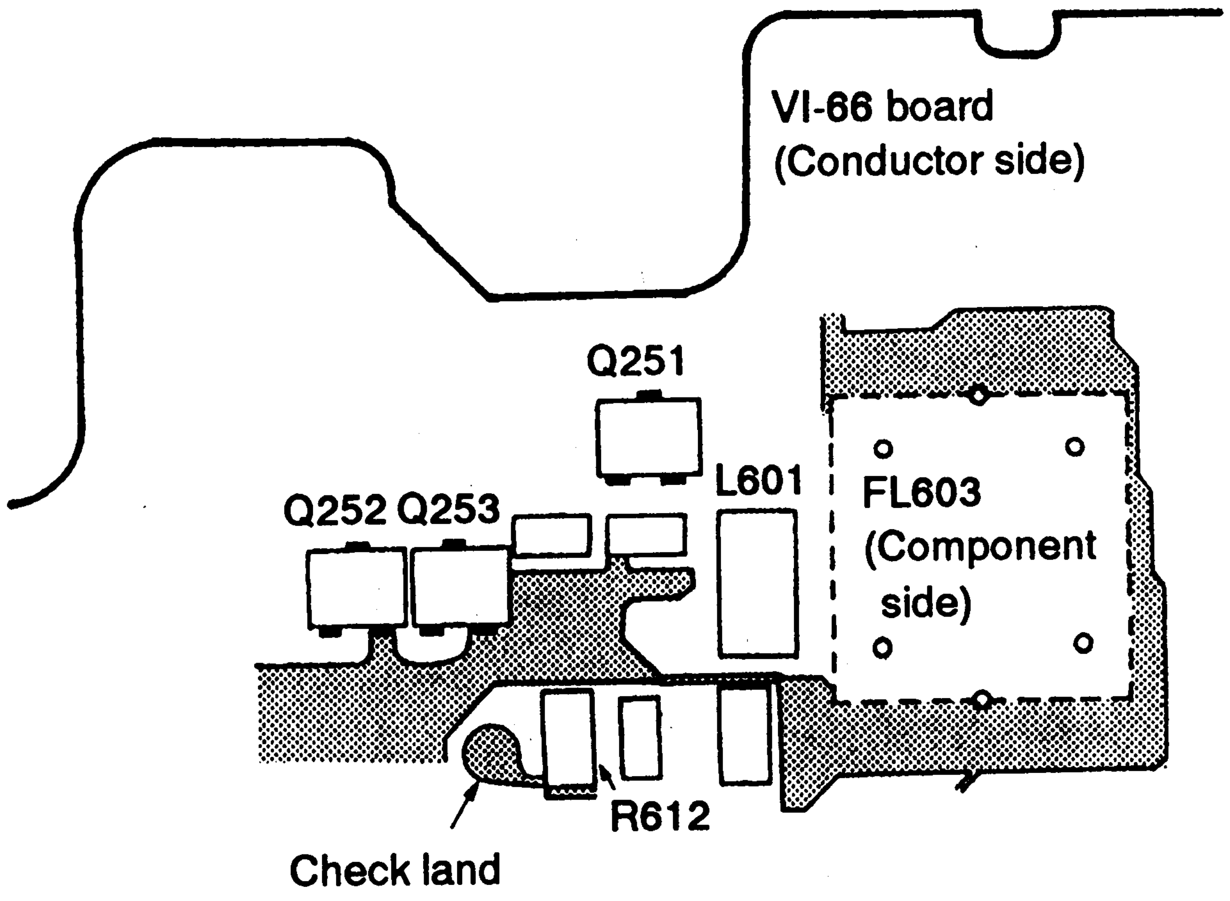


Pin ⑤ (VI 5V) of HD-8 board
10 kΩ
Pin ㊼ of IC602
10 kΩ
Pinn ⑦ (GND) of HD-8 boars

Fig. 9-27.

Adjusting method:

1) Adjust FL603 so that amplitude of the flat section of the chroma signal becomes minimum.



VI-66 board (Conductor side)
Q251
L601
Q252 Q253
FL603 (Component side)
R612
Check land

Fig. 9-28.

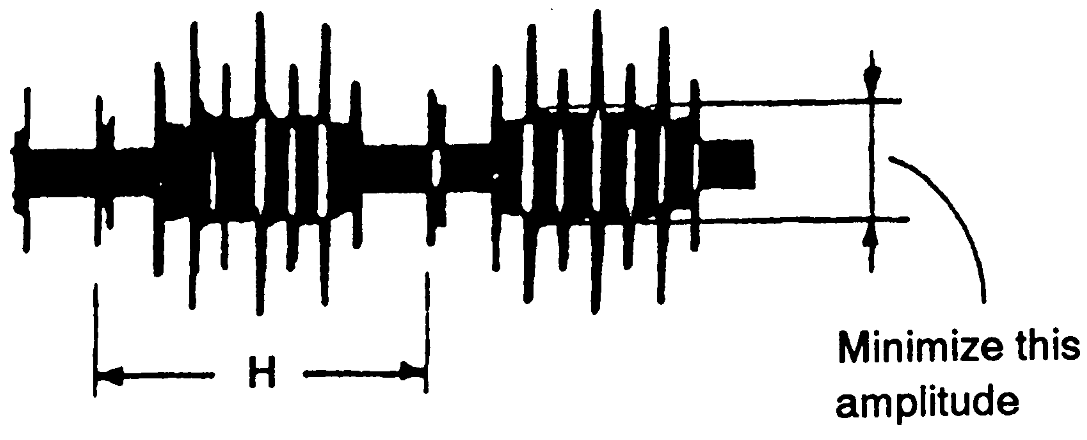


Fig. 9-29.

9-5-15. Carrier Balance Adjustment (VI-66 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ㊵ of IC602
Measuring Instrument	Oscilloscope
Adjusting Element	RV601
Specified Value	Minimum 4.32 MHz component

Adjusting method:

1) Adjust RV601 to minimize the 4.32 MHz component.

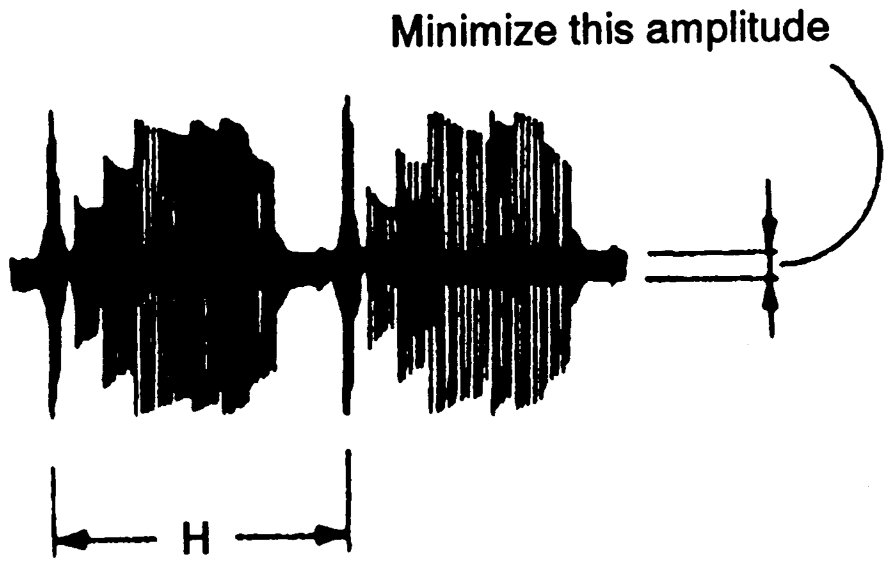


Fig. 9-30.

9-5-16. Recording Current Adjustment

Note: Perform adjustment in the E mode with using a ME type tape. Check the following two points before adjustment:

1. Make sure that Hi8 switch (E mode/L mode select switch: S770 on DK-3 board) is set to AUTO position (E mode side).
2. When performing adjustment other than "REC PCM recording current adjustment", disconnect CN303 on the PC-35 board for prevention of the effect to PCM audio system.

1. REC Y recording current adjustment (MR-19 board)

Mode	Recording
Signal	No signal
Measurement Point	TP802 (Pin ⑳ of HR-3 board: CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV806
Specified Value	150 ± 10 mVp-p

Note: After this adjustment is completed, be sure to perform "REC C", "REC AFM" and "REC ATF" recording current adjustments.

Adjusting method:

1) Insert a ME type cassette tape and select the recording mode.
2) Adjust RV806 to 150 ± 10 mVp-p.

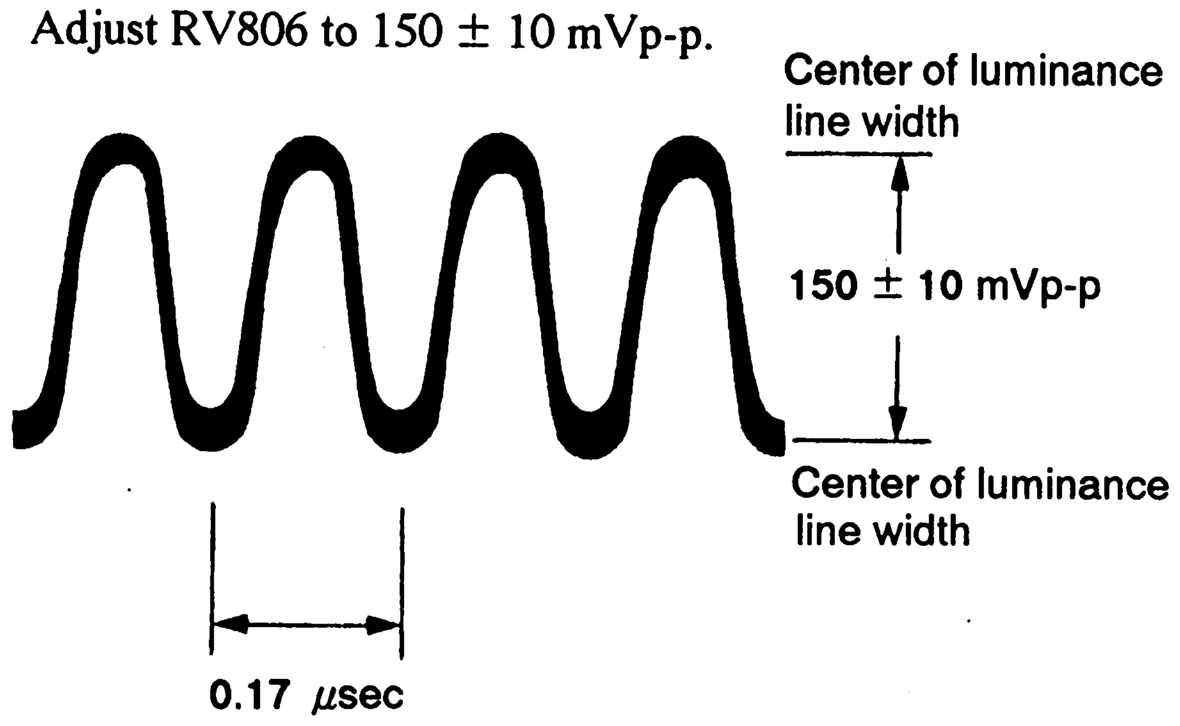

Center of luminance line width
150 ± 10 mVp-p
Center of luminance line width
0.17 μsec

Fig. 9-31.

2. REC C recording current adjustment (MR-19 board)

Mode	Recording
Signal	Color bar (S VIDEO)
Measurement Point	TP802 (Pin ⑳ of HR-3 board: CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV805
Specified Value	45 ± 5 mVp-p

Note: After this adjustment is completed, be sure to perform "REC AFM" and "REC ATF" recording current adjustments.

Connections:

1) Connect following three sections with a jumper wire.
   - Pin ⑨ (REC Y RF) of CN804 on the MR-19 board and Pin ⑧ (REG 5V)
   - Q312 emitter (REC ATF) on the SS-95 board and GND
   - Pin ① (REC AFM) of CN701 on the AS-22 board and Pin ⑤ (AFM 5V) of CN702.

Adjusting method:

1) Insert a ME type cassette tape and select the recording mode.
2) Adjust RV805 to 45 ± 5 mVp-p.

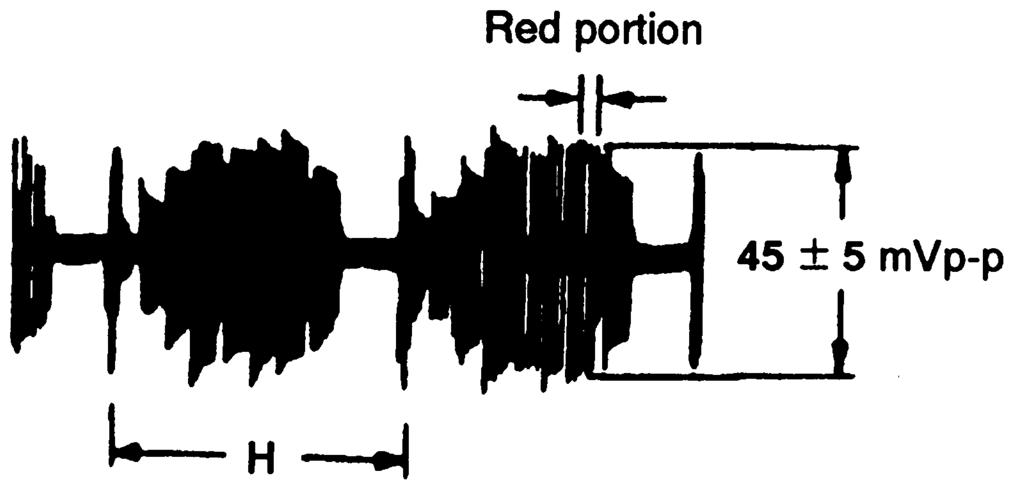


Fig. 9-32.

3. REC AFM recording current adjustment (AS-22 board)

Mode	Recording
Signal	No signal
Measurement Point	TP802 on MR-19 board (Pin ⑳ of HR-3 board: CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV713
Specified Value	10.5 ± 1.5 mVp-p

Note: If the signal level at TP802 is not enough to read, connect directly to a 100Ω resister without a 10:1 probe, as shown below.

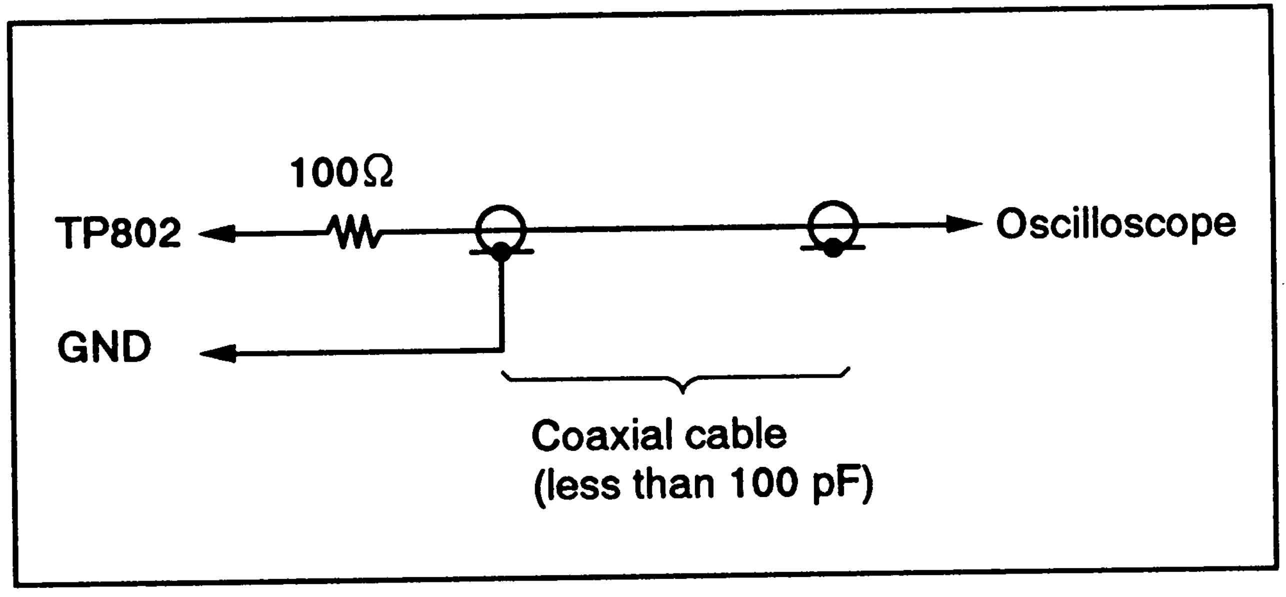


Fig. 9-33.

Connections:

1) Connect following three sections with a jumper wire.
- Pin ⑨ (REC Y RF) of CN804 on the MR-19 board and Pin ⑧ (REG 5V)
- Q312 emitter (REC ATF) on the SS-95 board and GND
- Pin ⑩ (1.7 MHz CARRIER $\overline{\text{ON}}$/OFF) of CN702 on the AS-22 board and Pin ⑤ (AFM 5V)

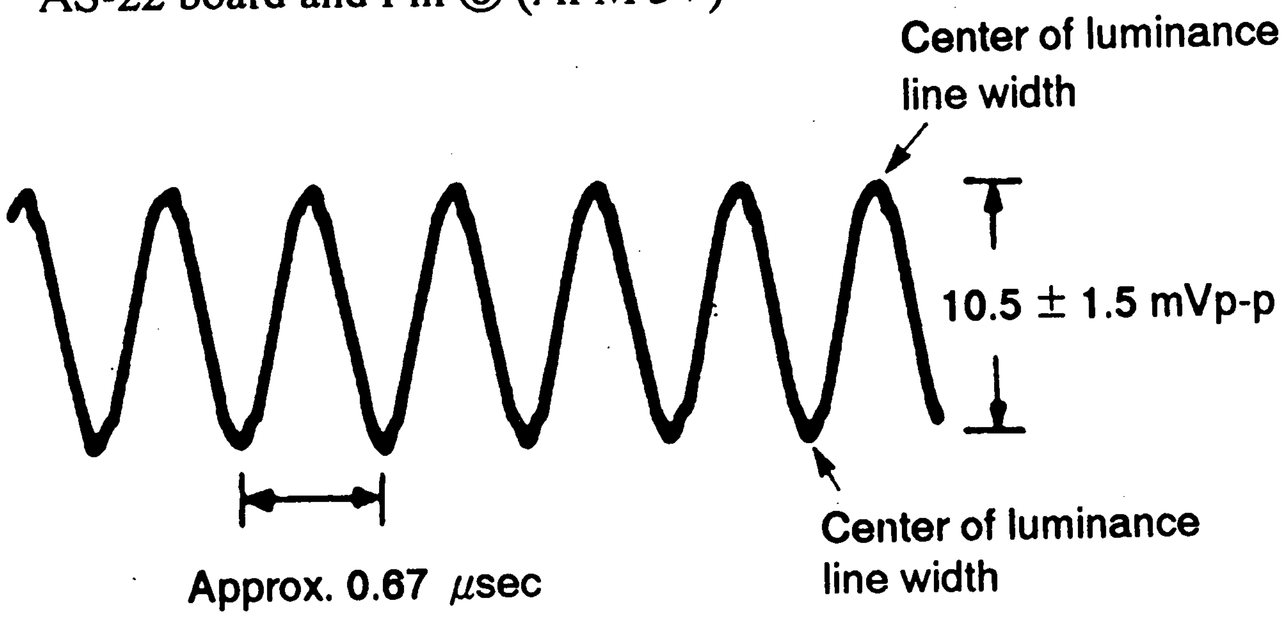


Fig. 9-34.

4. REC ATF recording current adjustment (SS-95 board)

Mode	Recording
Signal	No signal
Measurement Point	TP802 on the MR-19 board (Pin ⑳ of HR-3 board: CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV310
Specified Value	8.5 ± 1.5 mVp-p

Note: If the signal level at TP802 is not enough to read, connect directly to a 100Ω resister without a 10:1 probe, as shown below.

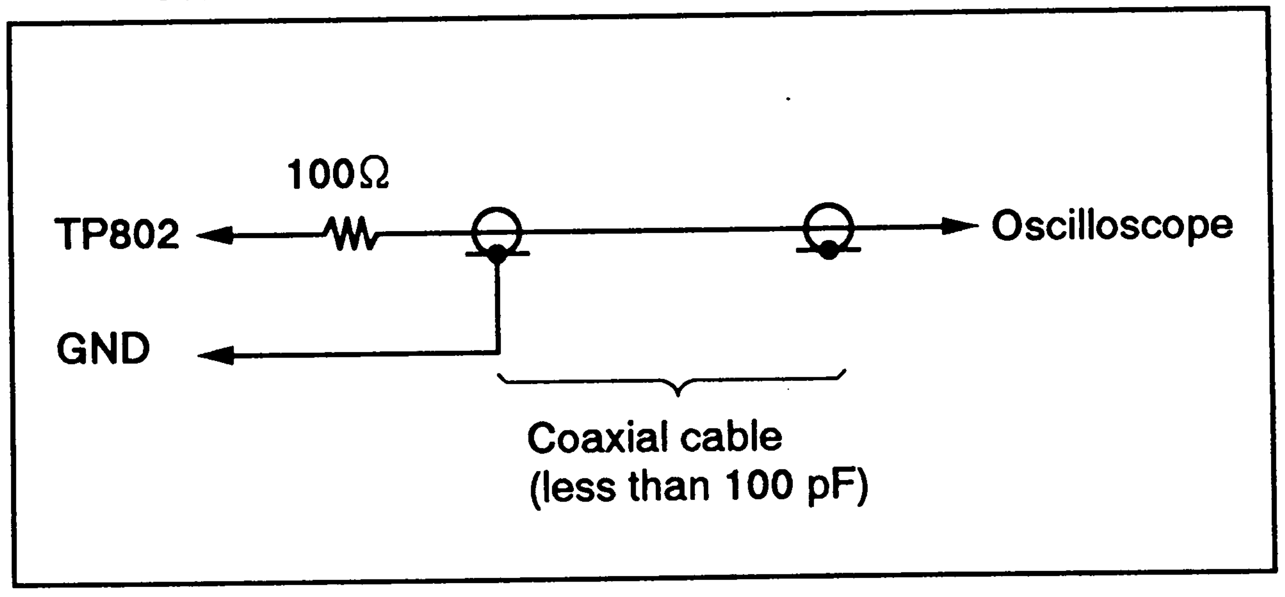


Fig. 9-35.

Connections:

1) Connect following two sections with a jumper wire.
   - Pin ⑨ (REC Y RF) of CN804 on the MR-19 board and Pin ⑧ (REG 5V)
   - Pin ① (REC AFM) of CN701 on the AS-22 board and Pin ⑤ of CN702 (AFM 5V)

Adjusting method:

1) Insert a ME type cassette tape and select the recording mode.
2) Adjust RV310 to 8.5 ± 1.5 Vp-p.

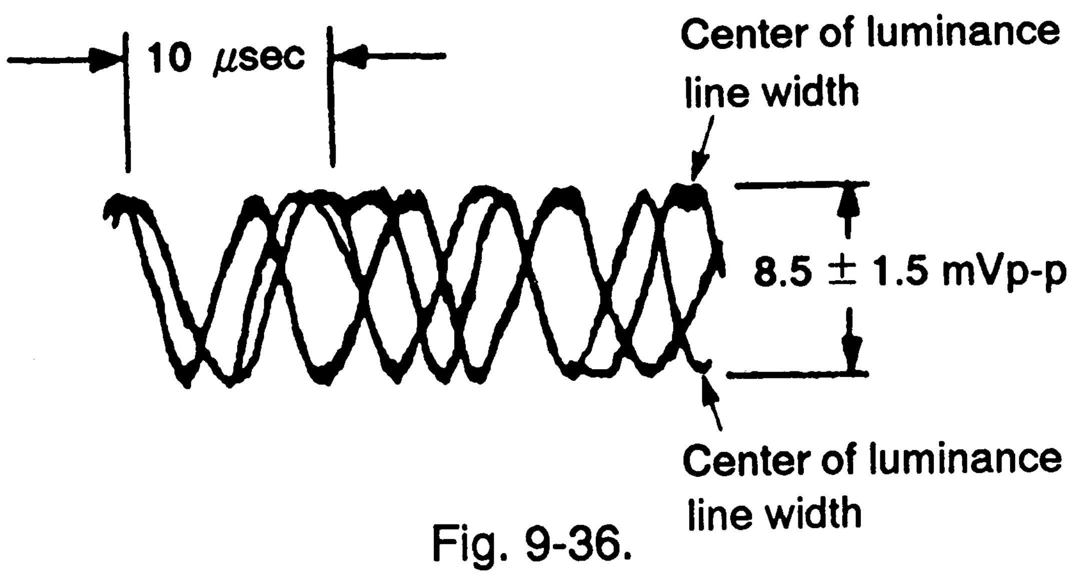


Fig. 9-36.

5. REC PCM recording current adjustment (PC-35 board)

Mode	Recording
Signal	No signal
Measurement Point	TP802 on MR-19 board (Pin ⑳ of HR-3 board: CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV307
Specified Value	215 ± 15 mVp-p

Note: Confirm that CN303 of the PC-35 board is connected.

Connections:

1) Connect TP805 (Base of Q837) and TP806 (Collector of Q837) on the MR-19 board with a jumper wire.

Adjusting method:

1) Insert a ME type cassette tape and select the recording mode.
2) Adjust RV307 to 215 ± 15 mVp-p.

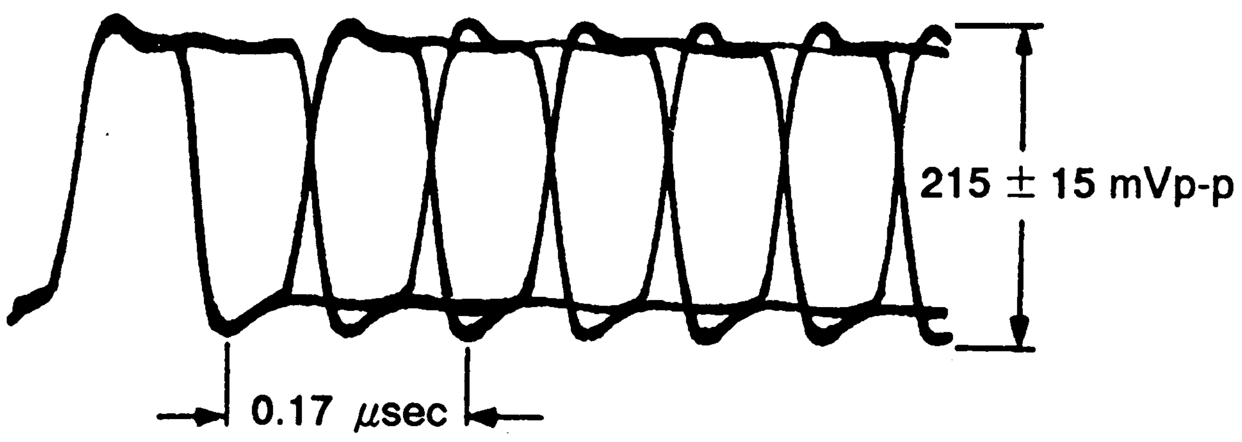


Fig. 9-37.

9-5-17. VIDEO OUT Level Adjustment (PJ-22 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement Point	J904 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV901
Specified Value	1.00 ± 0.025 Vp-p

Note: J904 (VIDEO OUT) must be terminated at 75Ω .

Adjusting method:

1) Adjust RV901 to 1.00 ± 0.025 Vp-p.

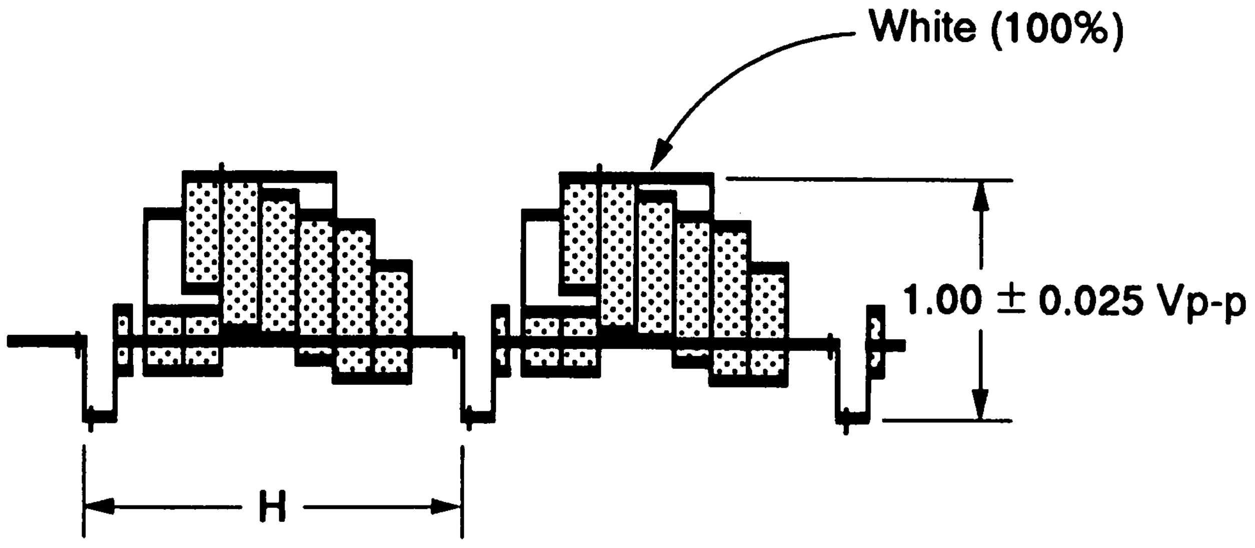


Fig. 9-38.

9-5-18. Y OUT Level Adjustment (PJ-22 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement Point	Y signal terminal (Pin ③) of J903 (S VIDEO OUT).
Measuring Instrument	Oscilloscope
Adjusting Element	RV902
Specified Value	1.00 ± 0.025 Vp-p

Connections:

1) Terminate the Y signal terminal (Pin ③) of J903 at 75Ω .
2) Connect Pin ⑤ (S POWER SAVE) and GND with a jumper wire.

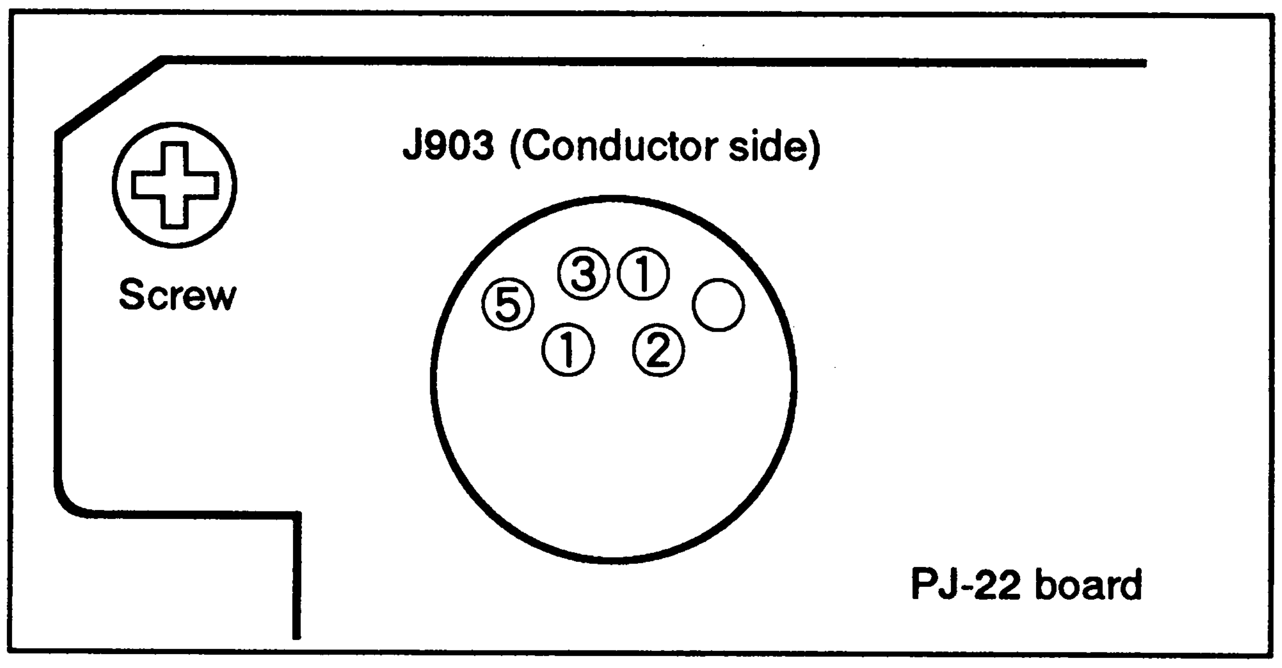


Fig. 9-39.

Adjusting method:

1) Adjust RV902 to 1.00 ± 0.025 Vp-p.

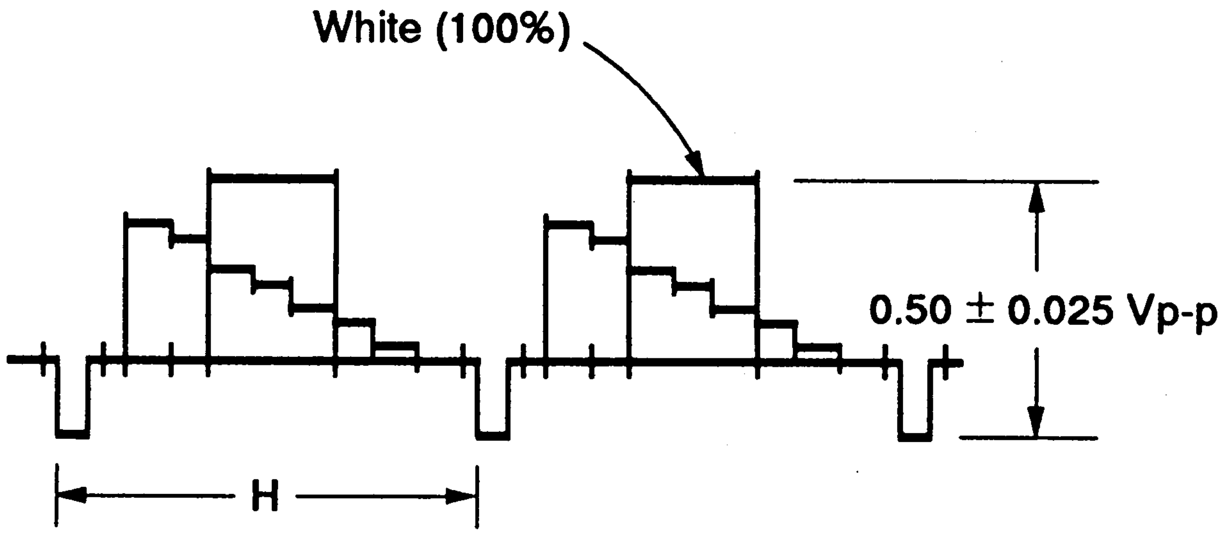


Fig. 9-40.

9-5-19. C OUT Level Adjustment (PJ-22 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement Point	Chroma signal terminal (Pin ④) of J903 (S VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV903
Specified Value	0.286 ± 0.007 Vp-p

Connections:

1) Terminate the chroma signal terminal (Pin ④) of J903 at 75Ω .
2) Connect Pin ⑤ (S POWER SAVE) and GND with a jumper wire.

Adjusting method:

1) Adjust the burst level with RV903 to 0.286 ± 0.007 Vp-p.

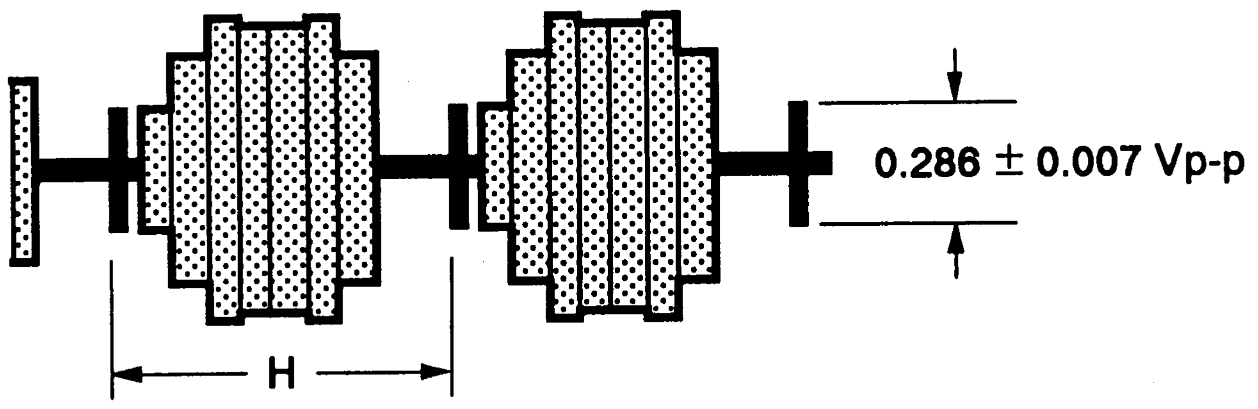


Fig. 9-41.

9-5-20. Character Generator fo Adjustment (VI-66 Board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ⑳ of IC407
Measuring Instrument	Frequency counter
Adjusting Element	CV401
Specified Value	15.834 ± 100 Hz

Adjusting method:

1) Adjust CV401 to 15.834 ± 100 Hz.

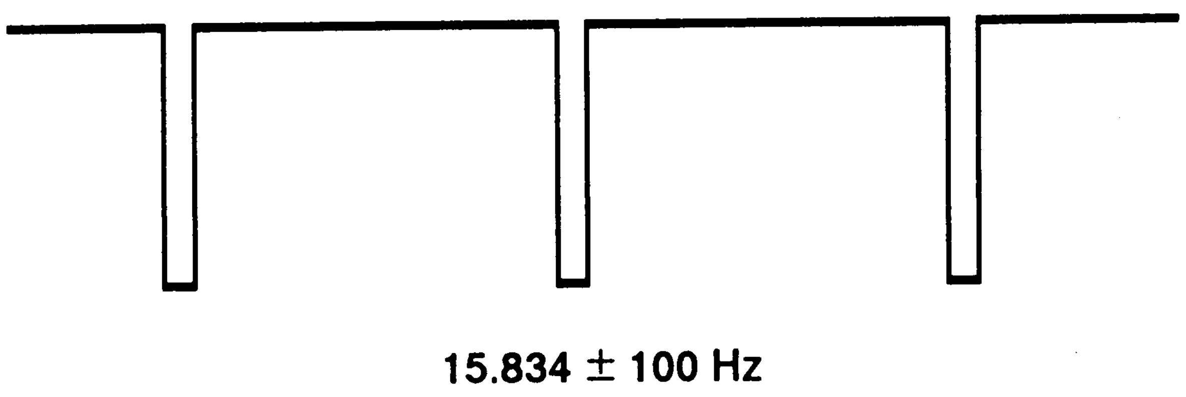


Fig. 9-42.

9-5-21. DDS Character Position Adjustment (VI-66 Board)

Mode	Playback (data screen: ON)
Signal	Alignment tape for operation check Color bar section
Measurement Point	Monitor TV screen
Measuring Instrument	Monitor TV
Adjusting Element	CV402
Specified Value	Left inner contour of the number at the right side of the count indication is lined up with the border line between the red and blue color bars.

Adjusting method:

1) Turn on the data screen by DATA SCREEN button (S741 on VK-2 board).
2) Adjust CV401 until the left inner contour of the number at the right side of the count indication is lined up with the border line between the red and blue color bars.

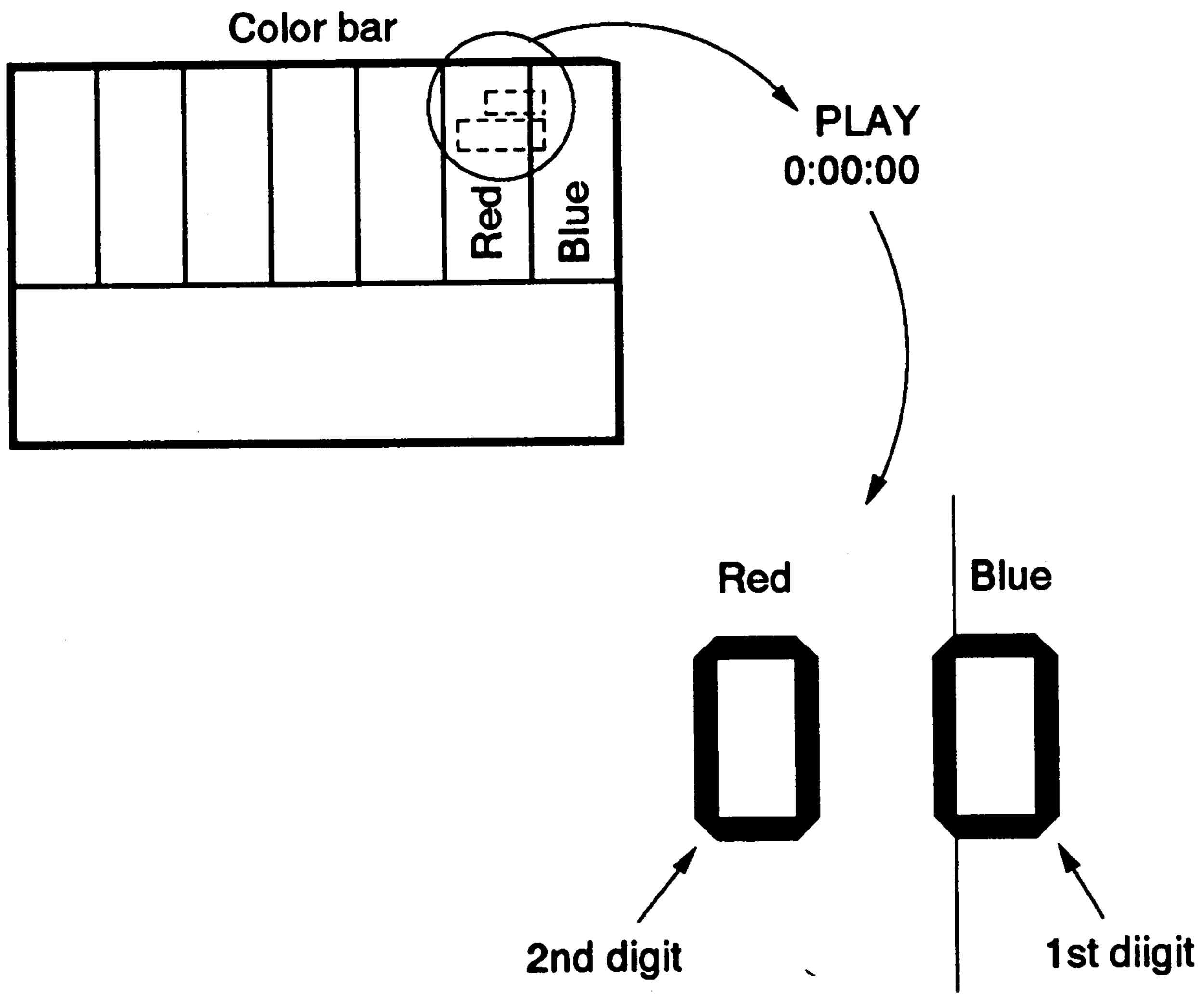


Fig. 9-43.

9-6. DIGITAL PICTURE SYSTEM ADJUSTMENT

Set the switches to the following positions.

- POWER (CAMERA/OFF/VTR) switch (S743 on VK-2 board)……CAMERA
- +VTR switch (S745 on VK-2 board)……ON
- DIGITAL EFECT switch (S761 on DK-3 board)……ON
- EFECT LEVEL selector (S215 on FD-13 board)……3

[Input signals]

Remove CN604 on the DI-21 board and input the Y signal from the pattern generator. At this time, connect the oscilloscope to Pin ③ of CN604, and confirm that the Y signal level is 1 Vp-p and that there are no chroma and burst signals.

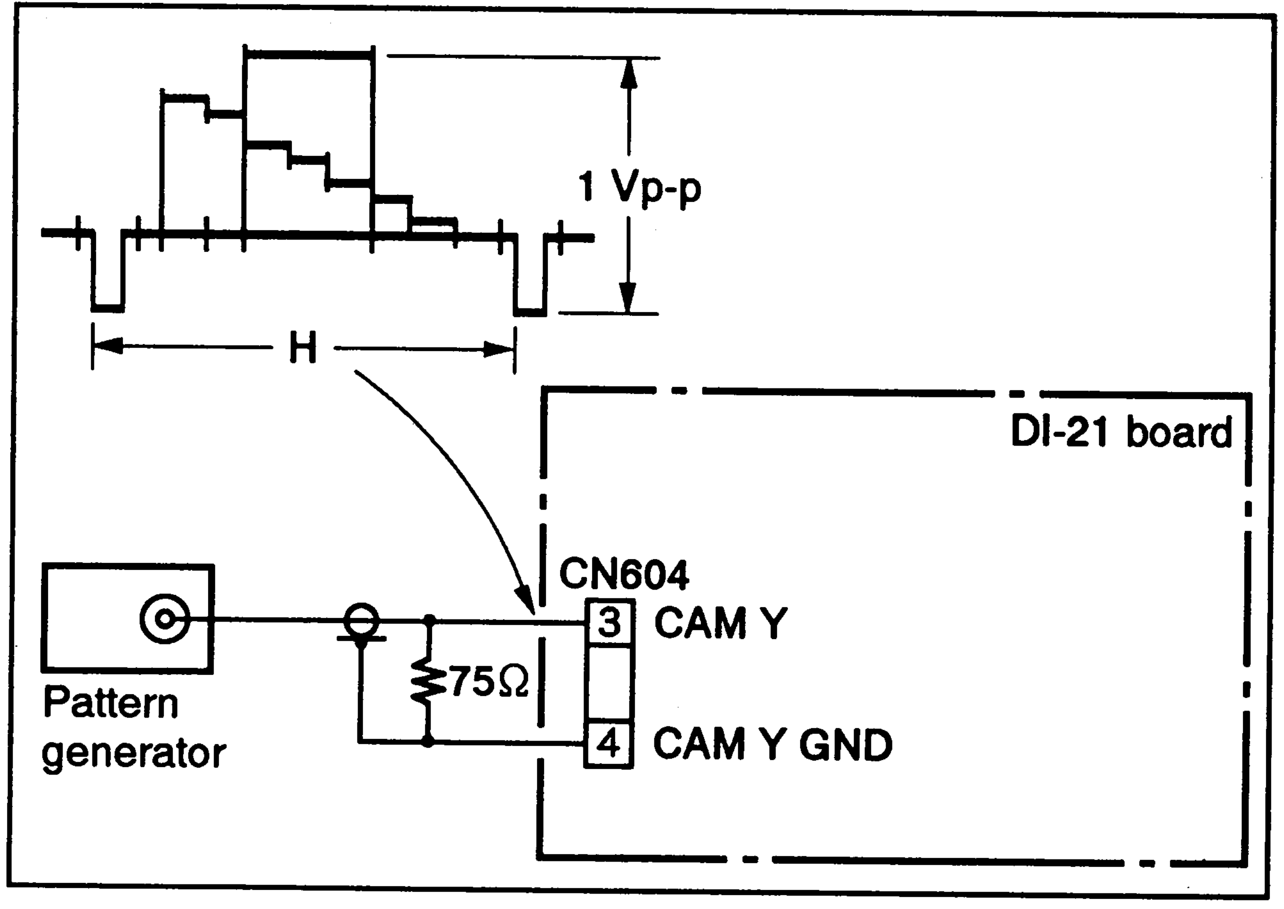


Fig. 9-44.

9-6-1. AFC Adjustment (DI-21 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	TP603 (Pin ⑰ of IC704: YWCK)
Measuring Instrument	Frequency counter
Adjusting Element	VC701
Specified Value	14.318180 MHz ± 50 kHz

Connections:

1) Connect Pin ⑤ (VIDEO IN) of IC704 and Pin ⑬ (DM 4.4V) of IC708 with a jumper wire.
2) Connect Pin ⑩ (PWM) and Pin ⑪ (PEO) of IC704 with a jumper wire.

Adjusting method:

1) Adjust VC701 so that the Y signal write clock (YWCK) free run frequency becomes 14.318180 MHz ± 50 kHz.

9-6-2. APC Adjustment (DI-21 Board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-5NSP or WR5-4NSP) Color bar section
Measurement Point	TP606 (Pin ㊻ of IC701: CWCK)
Measuring Instrument	Frequency counter
Adjusting Element	RV604
Specified Value	14.318400 MHz ± 50 Hz

Connections:

1) Connect Pin ⑲ (chroma signal input) and Pin ⑳ (GND) of IC709 with a 0.01 μF capacitor.

Adjusting method:

1) Adjust RV604 so that the chroma signal write clock (CWCK) free run frequency becomes 14.3181400 MHz ± 50 Hz.

9-6-3. V-PLL Adjustment (DI-21 Board)

Mode	Playback
Signal	Arbitrary
Measurement Point	TP609 (Pin (119) of IC703: YRCK)
Measuring Instrument	Frequency counter
Adjusting Element	RV605
Specified Value	14.318180 MHz ± 200 Hz

Adjusting method:

1) Adjust RV605 so that the Y signal write clock (YRCK) frequency becomes 14.318180 ± 200 Hz.

9-6-4. D/A SYNC Level Adjustment (DI-21 Board)

Mode	Camera E-E
Signal	Color bar signal (with chroma signal and burst signal being OFF)
Measurement Point	Pin ③ of CN602
Measuring Instrument	Oscilloscope
Adjusting Element	RV603
Specified Value	A=a ± 10 mV

Adjusting method:

1) Press CLEAR (DIGITAL EFECT CLEAR) button (S765 on DK-3 board).
2) Read the through signal sync level (a).
3) Press FLASH MOTION button (S763 on DK-3 board).
4) Adjust RV603 so that the memory read-out signal sync level (A) becomes a ± 10 mV.

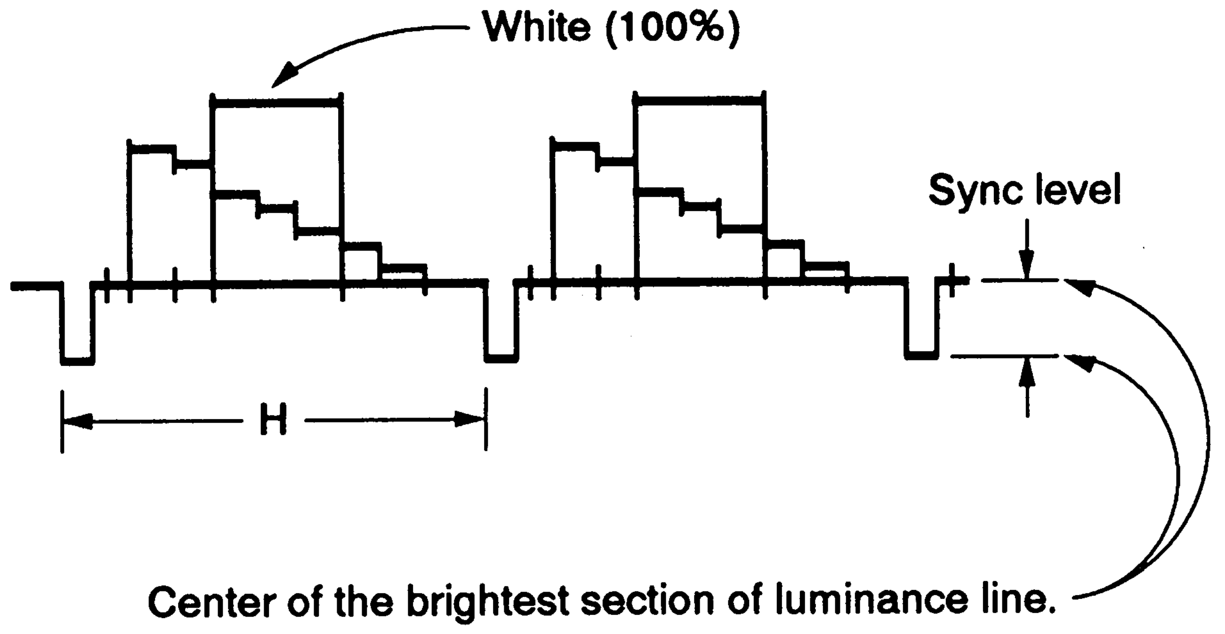

White (100%)
Sync level
H
Center of the brightest section of luminance line.

Fig. 9-45.

9-6-5. A/D White Level Adjustment (DI-21 Board)

Mode	Camera E-E
Signal	Color bar signal (with chroma and burst signals being OFF)
Measurement Point	Pin ③ of CN602
Measuring Instrument	Oscilloscope
Adjusting Element	RV602
Specified Value	B=b ± 10 mV

Adjusting method:

1) Press CLEAR (DIGITAL EFECT CLEAR) button (S765 on DK-3 board).
2) Read the through signal white level (b).
3) Press FLASH MOTION (S763 on DK-3 board) button.
4) Adjust RV602 so that the memory read-out white level (B) becomes b ± 10 mV.

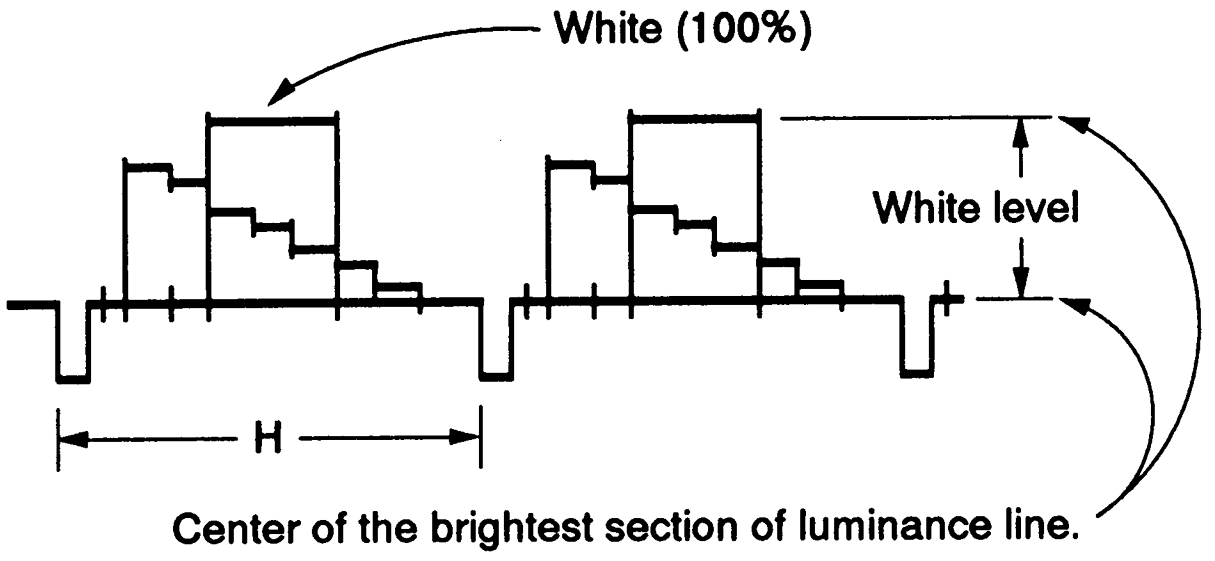

White (100%)
White level
H
Center of the brightest section of luminance line.

Fig. 9-46.

9-7. AUDIO SYSTEM ADJUSTMENT

- Perform adjustment with using the color bar signal as a video input signal.

[Connection of audio system measuring instruments]

In addition to the video system measuring instruments, connect the audio system measuring instruments as shown in the figure below.

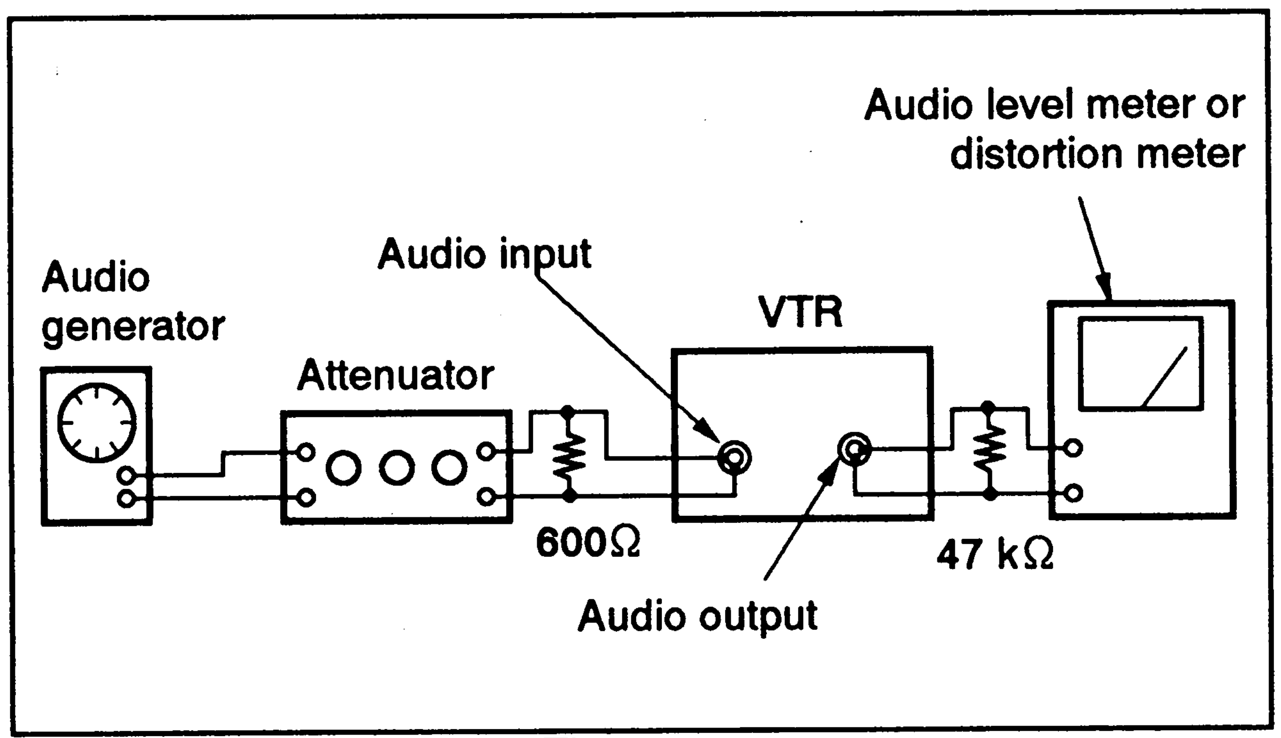

Audio level meter or distortion meter
Audio input
Audio generator
VTR
Attenuator
600Ω
47 kΩ
Audio output

Fig. 9-47.

9-7-1. PCM Audio System Adjustment

Unless otherwise specified, the switches or controls are set to the following positions for adjustments.

- AUDIO MONITOR (DIGITAL/HIFI) switch (S902 on PJ-22 board)......DIGITAL (PCM)
- AUDIO MONITOR (STEREO/MAIN/SUB) switch (S801 on LI-12 board)......STEREO
- AGC switch (S220 on FD-13 board)......OFF
- REC LEVEL control (RV211 on FD-13 board)......Position 10
- BALANCE control (RV212 on FD-13 board)......Mechanical center

Note: In adjustments which is performed for both R and L channels, the adjusting element for R channel is shown in parentheses [ ].

[Adjustment procedure]

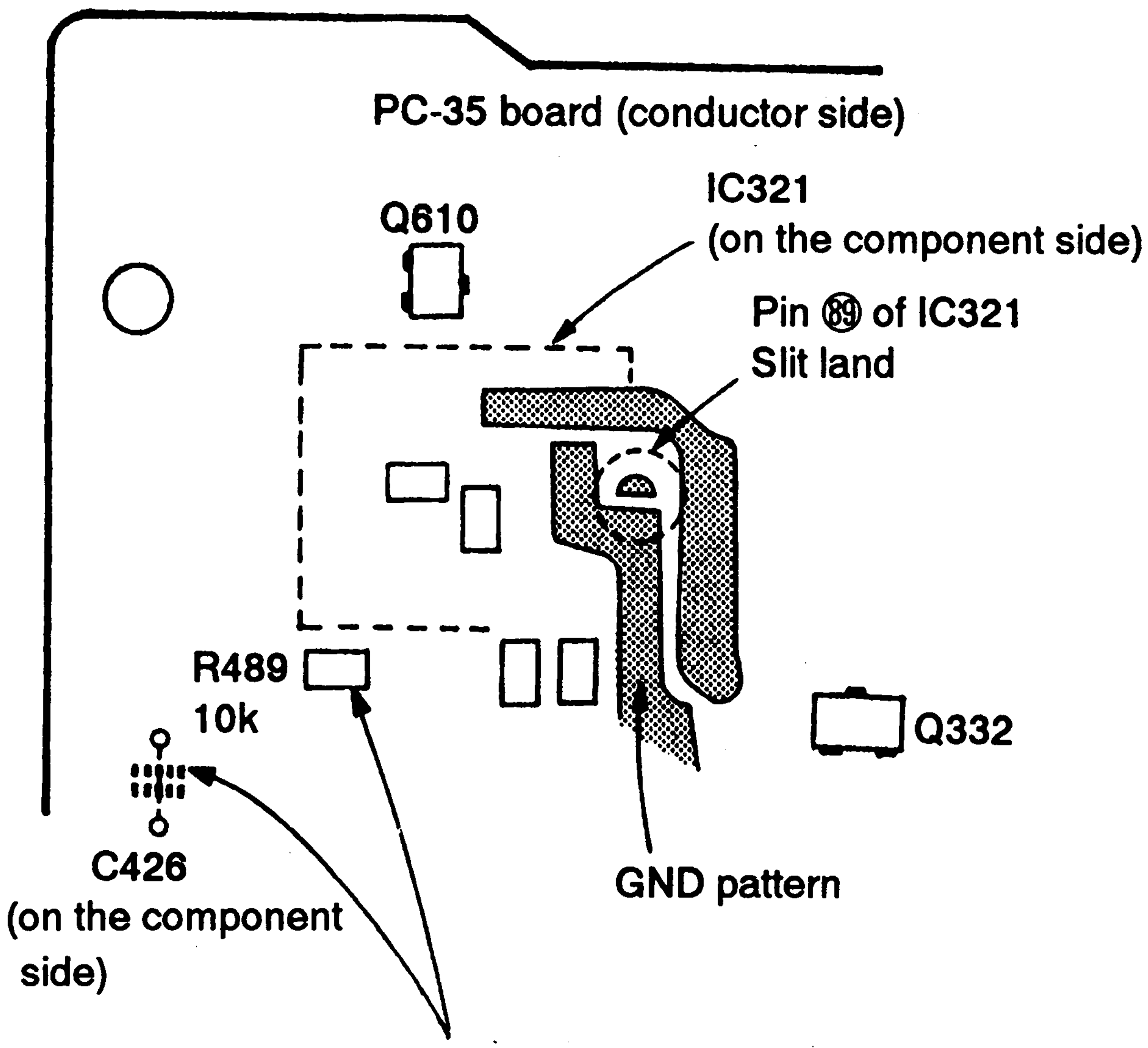
1) PCM master clock adjustment
2) PCM playback VCO free oscillation frequency adjustment
3) PCM playback level adjustment
4) E-E output level check
5) Level meter adjustment
6) PCM off-set adjustment
7) PCM recording level adjustment
8) Overall frequency characteristics check
9) Overall distortion check
10) Overall noise level check

1. PCM master clock adjustment (PC-35 board)

Mode	Recording
Signal	No signal
Measurement Point	Pin ㉑ (MCKO) of IC321
Measuring Instrument	Frequency counter
Adjusting Element	CV422
Specified Value	11.58 ± 0.01 MHz

Connections:

1) Desolder the slit land of Pin (89) (TEST 4) of IC321 to open. Then connect Pin (89) of IC321 and the 5V power supply (Q317 collector) with a jumper wire.
2) Connect Pins ㉖ and ㉗ of IC321 with a jumper wire.



Connect across these two point with a jumper wire in 2).

Fig. 9-48.

Adjusting method:

1) Adjust CV422 so that the clock frequency becomes 11.58 ± 0.01 MHz.

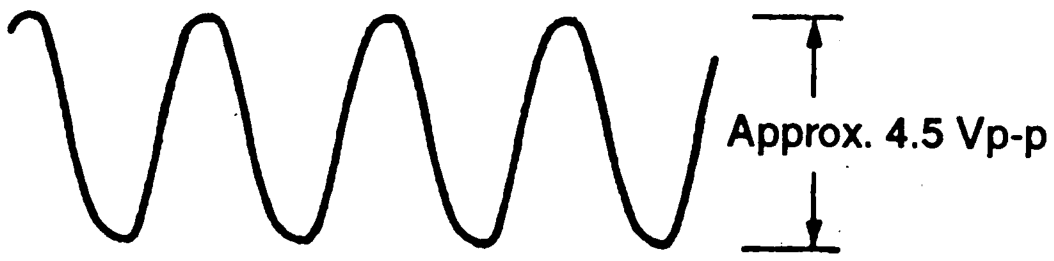


Fig. 9-49.

2. PCM playback VCO free oscillation frequency adjustment (PC-35 board)

Mode	Playback
Signal	Arbitrary
Measurement Point	Pin ⑧ of IC324
Measuring Instrument	Frequency counter
Adjusting Element	RV306
Specified Value	11.58 ± 0.02 MHz

Connections:

1) Remove CN303.
2) Connect Pin ① of IC324 and Q317 collector (5V) with a jumper wire.

Adjusting method:

1) Adjust RV306 to 11.58 ± 0.02 MHz.

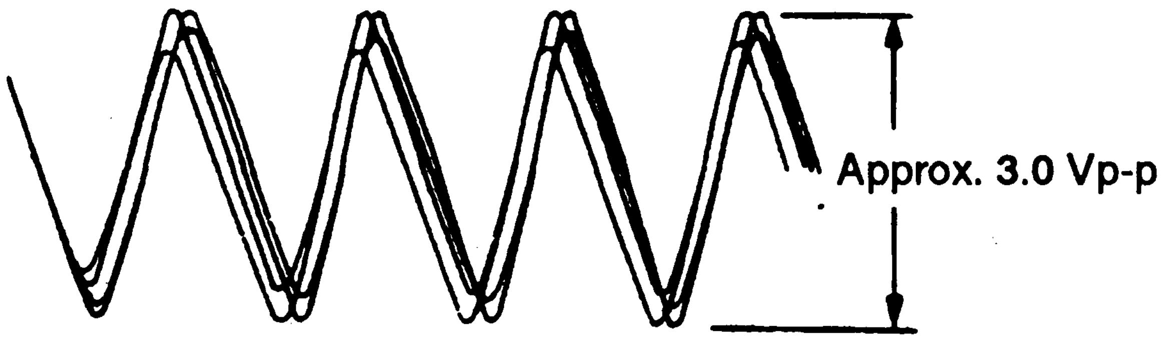


Fig. 9-50.

3. PCM playback level adjustment (PC-35 board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-5NSP) Monoscope signal section
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Adjusting Element	RV303
Specified Value	-7.5 ± 0.2 dBs

Adjusting method:

1) Adjust RV303 to -7.5 ± 0.2 dBs.

Note: If there is a level difference between L and R channels, adjust to the central value.

4. E-E output level check

Mode	E-E
Signal	1 kHz, −7.5 dBs: AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Specified Value	−7.5 ± 2.0 dBs

Checking method:

1) Set REC LEVEL control to the mechanical center position (align green marks of REC LEVEL control and the cabinet).
2) Confirm that AUDIO OUT terminal L [R] level is −7.5 ± 2.0 dBs.

5. Level meter adjustment (PC-35 board)

Mode	E-E
Signal	400 Hz, −10 dBs: AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Adjusting Element	RV304 [RV305]
Specified Value	Level meter of the video camera recorder unit indicates −10 dBs.

Adjusting method:

1) Adjust REC LEVEL control so that the AUDIO OUT terminal L [R] signal level becomes −10 dBs.
2) Adjust RV304 [RV305] so that the level meter L [R] of the video camera recorder unit indicates −10 dB.

6. PCM off-set adjustment (PC-35 board)

Mode	Recording
Signal	No signal
Measurement Point	CH1: Pin ㉘ (ADDA) of IC314 CH2: Pin ㉗ (WCK) of IC314
Measuring Instrument	Oscilloscope
Adjusting Element	RV310 [RV309]
Specified Value	Upper and lower luminance line brightness is equal.

Note: Since there is a correlation between L and R channels, be sure to adjust these two channels alternately.

Adjusting method:

1) Set REC LEVEL control to minimum (0) position.
2) Adjust RV310 [RV309] so that the upper and lower luminance lines brightness become equal.

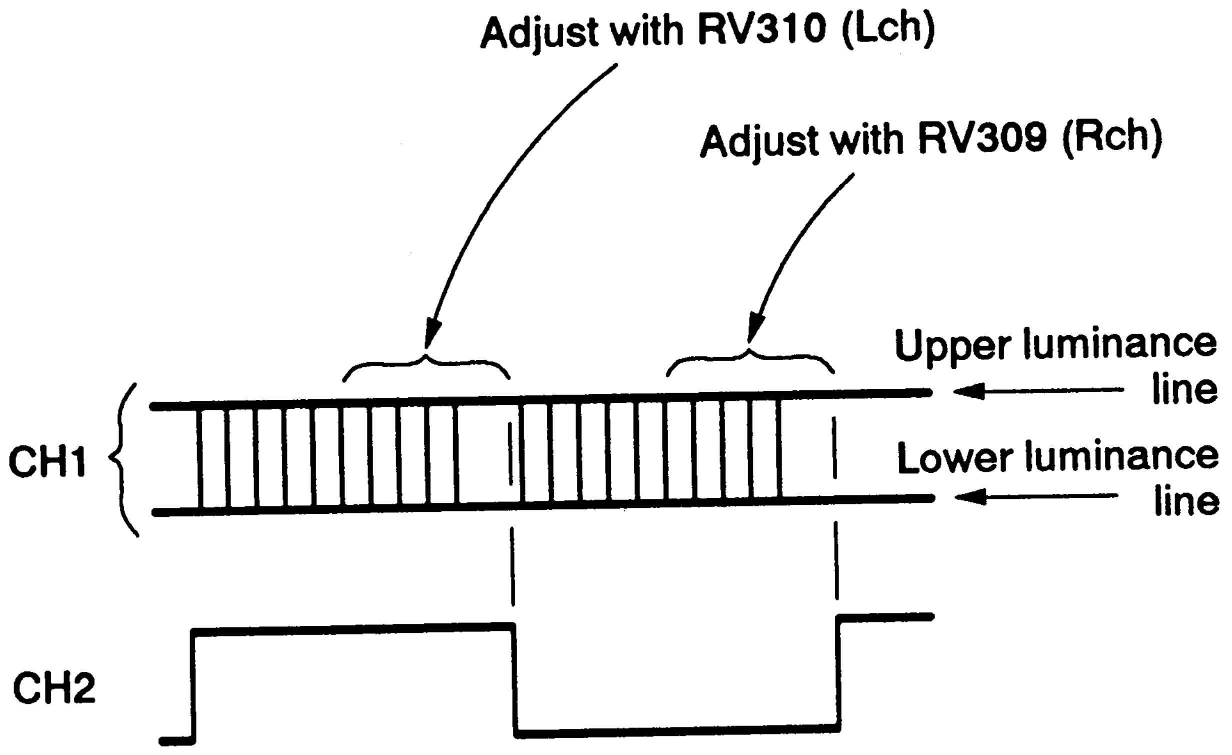


Fig. 9-51.

7. PCM Recording level adjustment (PC-35 board)

Mode	Self-recording and playback
Signal	1 kHz, –7.5 dBs: AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Adjusting Element	RV301 [RV302]
Specified Value	–7.5 ± 0.5 dBs

Note: Confirm that "PCM playback level adjustment" is completed.

Adjusting method:

1) Select the E-E mode.
2) Set the AUDIO OUT terminal L [R] output level to –7.5 dBs with REC LEVEL control.
3) Record the signal.
4) Play back the recorded section.
5) Confirm that the AUDIO OUT terminal L [R] output level is –7.5 ± 0.5 dBs.
6) If the specification is not satisfied, adjust RV301 [RV302] and then repeat steps 1) through 5).
   The signal level at Pin ⑬ [Pin ⑯] of IC314 in the recording is proportional to the output level in the playback mode*[1]. This adjustment can be made comparatively easy by turning the adjustment control while measuring the signal level at this point with the oscilloscope.
   *1: Since the signal will be subjected to logarithmic compressing, it is not linear proportion.

8. Overall frequency characteristics check

Mode	Self-recording and playback
Signal	Ⓐ 400 Hz, –20 dBs Ⓑ 20 Hz, –20 dBs Ⓒ 13 Hz, –20 dBs AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Specified Value	With the 400 Hz playback output level as 0 dB, the playback output level of 20 Hz is 0^{+2}_{-1} dB and that of 13 kHz is 0^{+1}_{-3} dB

Checking method:

1) Set the AUDIO OUT terminal L [R] output level to –20 dBs with REC LEVEL control.
2) Record signals Ⓐ through Ⓒ in the order.
3) Playback the recorded sections.
4) With the 400 Hz playback output level as 0 dB, confirm that the playback output level of 20 Hz is 0^{+2}_{-1} dB and that of 13 kHz is 0^{+1}_{-3} dB.

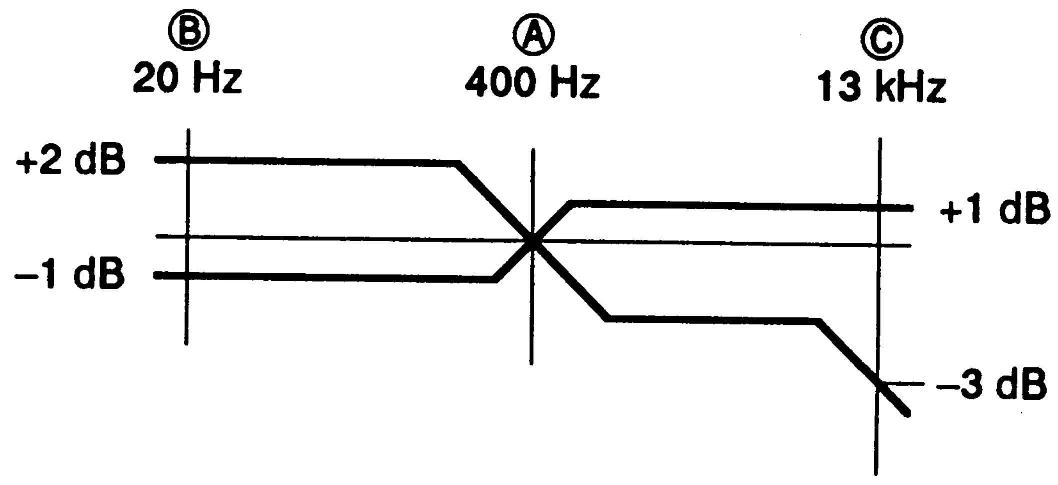


Fig. 9-52.

9. Overall distortion check

Mode	Self-recording and playback
Signal	1 kHz, –7.5 dBs: AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Distortion meter
Specified Value	Less than 0.5%*[1]

Checking method:

1) Set the AUDIO OUT terminal L [R] output level to –7.5 dBs with REC LEVEL control.
2) Record the signal.
3) Playback the recorded section.
4) Confirm that the distortion is less than 0.5% *[1].

*1 Value when 200 Hz to 6 kHz BPF (18 dB/OCT) is used.

10. Overall Noise Level Check

Mode	Self-recording and playback
Signal	No signal (shorting plug is inserted into AUDIO IN L and R terminals)
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Adjusting Element	Less than –7.85 dBs *[2]

Checking method:

1) Record the signal.
2) Playback the recorded section.
3) Make sure that the noise level is less than –7.85 dBs *[2].

*2 Value when IHF-A hearing correction filter is used.

9-7-2. AFM Audio System Adjustment

Unless otherwise specified, the switches or controls are set to the following positions for adjustments.

- AUDIO MONITOR (DIGITAL/HIFI) switch (S902 on PJ-22 board)......HIFI (AFM)
- AUDIO MONITOR (STEREO/MAIN/SUB) switch (S801 on LI-12 board)......STEREO
- AGC switch (S220 on FD-13 board)......OFF
- REC LEVEL control (RV211 on FD-13 board)......Position 10
- BALANCE control (RV212 on FD-13 board)......Mechanical center
- NARRATION mic......Be sure not to be used
- MONO MIC jack (J863 on MJ-5 board)......Be sure nothing to be connected.

Note: In adjustments which is performed for both R and L channels, the adjusting element for R channel is shown in parentheses [ ].

[Adjusting procedure]

1) 1.5 MHz carrier frequency adjustment
2) 1.7 MHz carrier frequency adjustment
3) Recording current ratio adjustment
4) E-E output level check
5) 1.5 MHz deviation adjustment
6) 1.7 MHz deviation adjustment
7) REC matrix L+R adjustment
8) REC matrix L–R adjustment
9) PB matrix L adjustment
10) PB matrix R adjustment
11) Overall level adjustment, separation check
12) Overall distortion check
13) Overall noise level check

1. 1.5 MHz carrier frequency adjustment (AS-22 board)

Mode	Recording
Signal	No signal
Measurement Point	Pin ⑬ of IC701
Measuring Instrument	Frequency counter
Adjusting Element	RV701
Specified Value	1.50 ± 0.01 MHz

Note: Use a 10:1 probe for connecting the frequency counter.

Connections:

1) Connect Pin ㉕ (PB/$\overline{\text{REC}}$) of IC708 and Pin ⑤ (AFM 5V) of CN702 with a jumper wire.

Adjusting method:

1) Set REC LEVEL control to minimum (0) position.
2) Adjust RV701 to 1.50 ± 0.01 MHz.
3) Reset REC LEVEL control to maximum (10) position.

2. 1.7 MHz carrier frequency adjustment (AS-22 Board)

Mode	Recording
Signal	No signal
Measurement Point	Pin ⑬ of IC702
Measuring Instrument	Frequency counter
Adjusting Element	RV703
Specified Value	1.70 ± 0.01 MHz

Note: Use a 10:1 probe for connecting the frequency counter.

Connections:
1) Connect Pin ㉕ (PB/$\overline{\text{REC}}$) of IC708 and Pin ⑤ (AFM 5V) of CN702 with a jumper wire.

Adjusting method:
1) Set REC LEVEL control to minimum (0) position.
2) Adjust RV703 to 1.70 ± 0.01 MHz.
3) Reset REC LEVEL control to maximum (10) position.

3. Recording current ratio adjustment (AS-22 board)

Mode	Recording
Signal	No signal
Measurement Point	Pin ① of CN701
Measuring Instrument	Oscilloscope
Adjusting Element	RV714
Specified Value	$\frac{\text{1.5 MHz level}}{\text{1.7 MHz level}} = 0.80 \pm 0.05$

Note: Use a 1:1 probe for connecting the oscilloscope.

REC LEVEL control setting:
- Minimum (0) position

Adjusting method:
1) Connect Pin ⑭ of IC702 and GND with a 0.01 μF capacitor.
2) Adjust the vertical gain control of the oscilloscope so that the 1.5 MHz sine wave amplitude corresponds to 5 scale.
3) Remove the capacitor connected in the step 1).
4) Connect Pin ⑭ of IC701 and GND 0.01 μF capacitor.
5) Adjust RV714 so that the 1.7 MHz sine wave amplitude corresponds to 4.00 ± 0.25 scale.
6) Remove the capacitor connected in the step 4), and set the vertical gain switch of the oscilloscope to CAL position.

4. E-E output level check (AS-22 board)

Mode	REC
Signal	400 Hz, –7.5 dBs: AUDIO IN terminal L [R]
Measurement Point	Pin ⑥ [Pin ⑧] of CN702
Measuring Instrument	Oscilloscope
Specified Value	693^{+180}_{-140} mVp-p (–10 ± 2 dBs)

Checking method:
1) Connect the oscilloscope to Pin ⑤ [Pin ①] of CN703.
2) Adjust REC LEVEL control so that the 400 Hz signal level is 350 mVp-p (–16 dBs).
3) Connect the oscilloscope to Pin ⑥ [Pin ⑧] of CN702.
4) Confirm that the 400 Hz signal level is 693^{+180}_{-150} mVp-p (–10 ± 2 dBs).

5. 1.5 MHz deviation adjustment (AS-22 board)

Mode	Playback
Signal	Alignment tape for operation check (WR5-5NSP)
Measurement Point	Pin ⑥ of CN702
Measuring Instrument	Oscilloscope
Adjusting Element	RV702
Specified Value	693 ± 16 mVp-p (–10.0 ± 0.2 dBs)

Switch setting:
- AUDIO MONITOR (STEREO/MAIN/SUB) switch (S801 on LI-12 board)……MAIN

Adjusting method:
1) Adjust RV702 so that the 400 Hz signal level is 693 ± 16 mVp-p.

6. 1.7 MHz deviation adjustment (AS-22 board)

A. Method using alignment tape

Mode	Playback
Signal	Alignment tape: for AFM stereo operation check (WR5-9NS)
Measurement Point	Pin ⑧ of CN702
Measuring Instrument	Oscilloscope
Adjusting Element	RV704
Specified Value	693 ± 16 mVp-p (–10.0 ± 0.2 dBs)

Switch setting

- AUDIO MONITOR (STEREO/MAIN/SUB) switch (S801 on LI-12 board)......SUB

Adjusting method:

1) Adjust RV704 so that the 1 kHz signal level is 693 ± 16 mVp-p.

B. Method Using spectrum analyzer

Mode	Recording
Signal	No signal: AUDIO IN terminal L 400 Hz, –1.5 dBs: AUDIO IN terminal R
Measurement Point	Pin ⑭ of IC702
Measuring Instrument	Spectrum analyzer
Adjusting Element	RV704
Specified Value	30.0 ± 0.5 kHz

Adjusting method:

1) Adjust RV704 so that the frequency deviation is 30.0 ± 0.5 kHz.

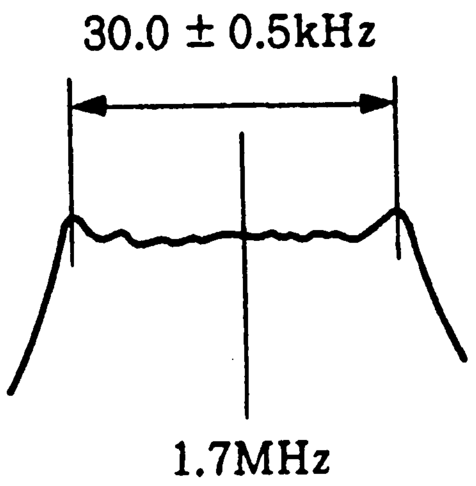


Fig. 9-53.

7. REC matrix L+R adjustment (AS-22 board)

Mode	Recording
Signal	1. 400 Hz, –7.5 dBs: AUDIO INPUT terminal L 2. 400 Hz, –7.5 dBs: AUDIO INPUT terminal R
Measurement Point	Pin ④ of IC704 (or Pin ① of IC703)
Measuring Instrument	Oscilloscope
Adjusting Element	RV706
Specified Value	The level difference between L input and R input is 0 ± 5 mVp-p.

Note: When measuring signal level at Pin ④ of IC704, start measuring 1 or more minute after input the signal. (for stabilizing AGC)

Adjusting method:

1) Input 400 Hz, –7.5 dBs signal only to AUDIO INPUT terminal L.
2) Read the signal level at Pin ④ of IC704 and make note of it. (Approximately 160 mVp-p)
3) Remove the connector from AUDIO INPUT terminal L, and input 400 Hz, –7.5 dBs signal only to AUDIO INPUT terminal R.
4) Adjust RV706 so that the signal level at Pin ④ of IC704 matches with that of noted in step 2).

8. REC matrix L–R adjustment (AS-22 board)

Mode	Recording
Signal	400 Hz, –7.5 dBs: AUDIO INPUT L, R both terminals
Measurement Point	Pin ⑨ of IC707 or Pin ⑦ of IC706
Measuring Instrument	Oscilloscope
Adjusting Element	RV707
Specified Value	0 ± 5 mVp-p

Note: Use a 1:1 probe.

Adjusting method:

1) Adjust RV707 so that the signal level at Pin ⑨ of IC707 becomes 0 ± 5 mVp-p.

9. PB matrix L adjustment (AS-22 board)

Mode	Recording and playback
Signal	No signal: AUDIO INPUT terminal L 400 Hz, –7.5 dBs: AUDIO INPUT terminal R
Measurement Point	AUDIO OUTPUT terminal L
Measuring Instrument	Audio level meter
Adjusting Element	RV710
Specified Value	Minimum L ch playback level

Adjusting method:

1) Input 400 Hz, –7.5 dB audio signal only to AUDIO INPUT terminal R.
2) Record the input signal.
3) Play back the recorded section.
4) Adjust RV710 so that the AUDIO OUT terminal L playback level becomes minimum.

10. PB matrix R adjustment (AS-22 board)

Mode	Recording and playback
Signal	400 Hz, –7.5 dB: AUDIO INPUT terminal L No signal: AUDIO INPUT terminal R
Measurement Point	AUDIO OUTPUT terminal R
Measuring Instrument	Audio level meter
Adjusting Element	RV712
Specified Value	Minimum R channel playback level

Adjusting method:

1) Input 400 Hz, –7.5 dB audio signal only to AUDIO INPUT terminal L.
2) Record the input signal.
3) Play back the recorded section.
4) Adjust RV712 so that the AUDIO OUTPUT terminal R playback level becomes minimum.

11. Overall level characteristics separation check

Mode	Self-recording and playback
Signal	400 Hz, –7.5 dBs: AUDIO IN terminal L [R] No signal (insert a shorting plug): AUDIO IN terminal R [L]
Measurement Point	AUDIO OUT terminal L and R
Measuring Instrument	Audio level meter
Specified Value	Level: –7.5 ± 3 dBs Separation: –27.5 dBs or less

Checking method:

1) Set the AUDIO OUT terminal L [R] output level to –7.5 dBs with REC LEVEL control.
2) Record the signal.
3) Play back the recorded section.
4) Confirm that the AUDIO OUT terminal L [R] output level is –7.5 ± 3 dBs.
5) Confirm that the AUDIO OUT terminal R [L] output level is –27.5 dBs or less.

12. Overall distortion check

Mode	Self-recording and playback
Signal	400 Hz, –7.5 dBs
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Distortion meter
Specified Value	0.8% or less*¹

Checking method:

1) Set the AUDIO OUT terminal L [R] output level to –7.5 dBs with REC LEVEL control.
2) Record the signal.
3) Play back the recorded section.
4) Confirm that the distortion is less than 0.8%. @/*1@

   *1: Value when a distortion measuring filter (Fig. 9-54.) is used. Less than 1.0% when no filter is used.

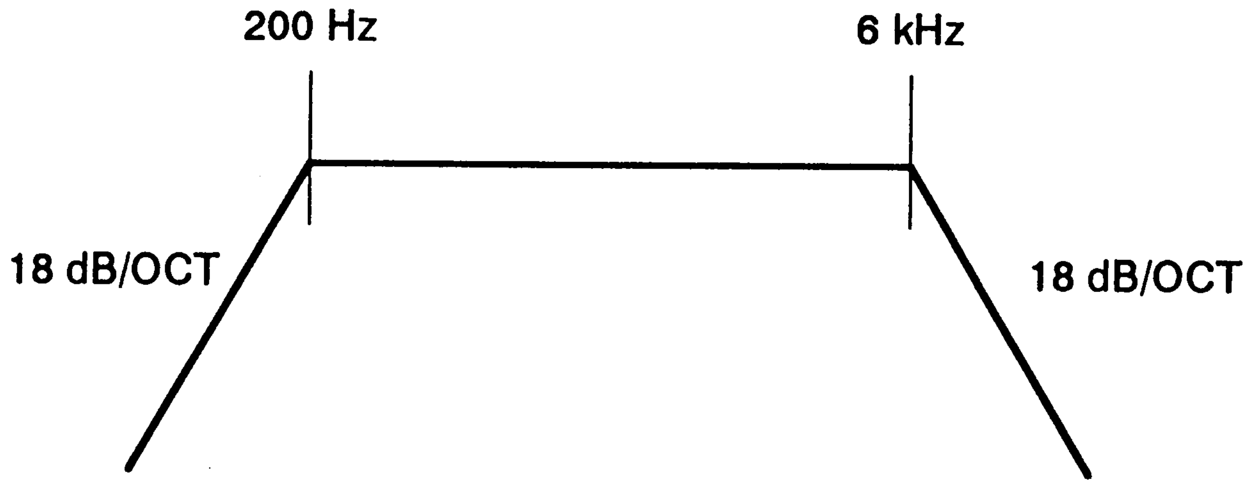


Fig. 9-54.

9-972-895-11

Sony Corporation
Personal Video Group

English
90D0950-1
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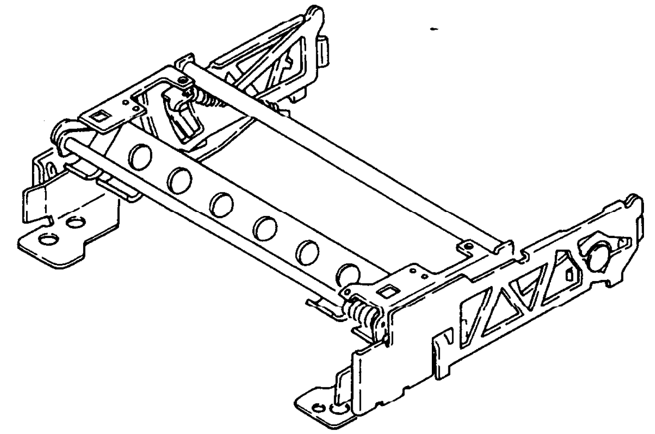
Published by Customer Relations and Service Group

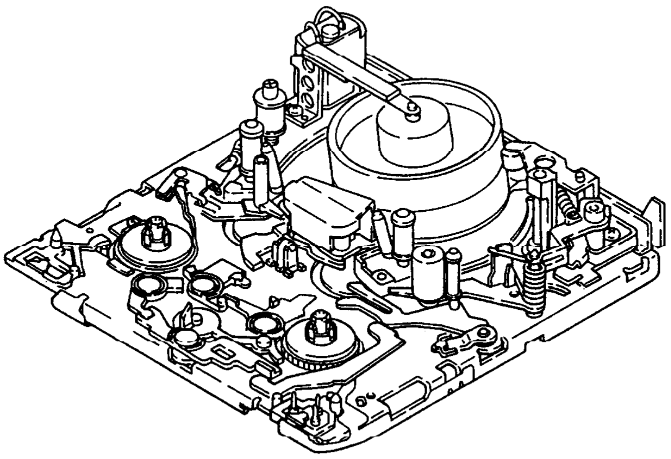
mm Video MECHANICAL ADJUSTMENT MANUAL III

U MECHANISM

Video 8

Please use in conjunction with the SERVICE MANUAL.





8 MECHANISM DECK

SONY

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1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Note: For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

1) Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
2) Cover the LED assembly with an opaque cap, etc. ❶.
3) Attach a piece of tape to the RECOG switch ❷ so that the pin is held down.
4) Push the EJECT lever ❸ in the direction of the arrow Ⓐ.

1-1-2. Setting the Playback Mode (See Fig. 1-1.)

1) Follow the procedures in section 1-1-1. above.
2) Put the rubber band ❹ around the S and T reels.
3) Press the PLAY switch of unit, then push the tension regulator arm assembly ❺ in the direction of the arrow Ⓑ when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
4) To stop operation, press the STOP switch.

1-1-3. Eject Operation (See Fig. 1-1.)

1) To eject, turn the EJECT switch on.

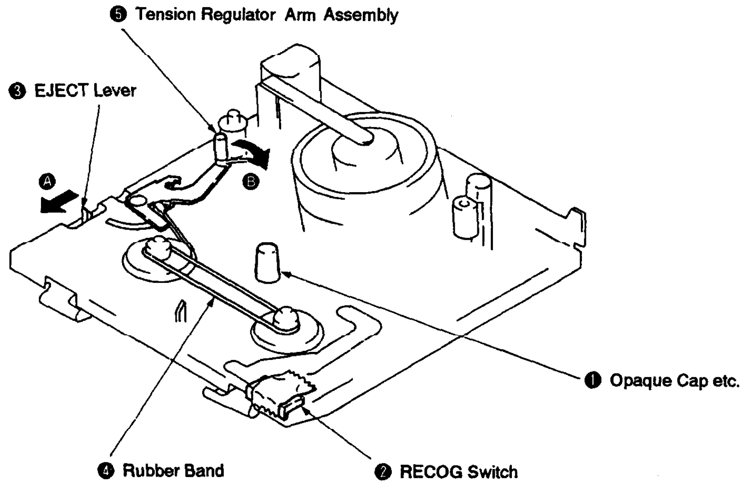


Fig. 1-1.

1-2. THE MODE SELECTOR

1-2-1. Name of Each Part (external) (See Fig. 1-2.)

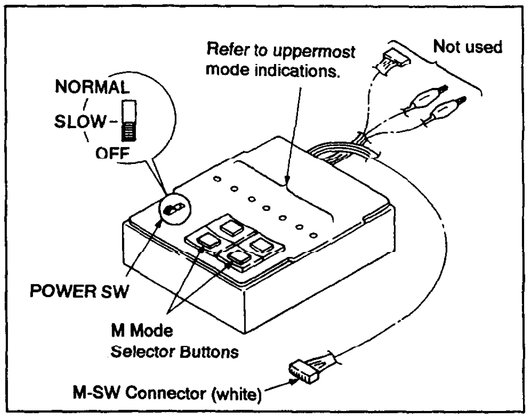

Refer to uppermost mode indications.
Not used
NORMAL
SLOW
OFF
POWER SW
M Mode Selector Buttons
M-SW Connector (white)

Fig. 1-2.

1-2-2. Connections (See Fig. 1-3.)

1) Mount the MODE SELECTOR III panel (Ref. No. J-9) ❶ onto the mode selector.
2) Attach the conversion connector (Ref. No. J-8) ❸ of MODE SELECTOR III to the 6-pin connector (white) ❷ of the mode selector M-SW.
3) Remove the FP-89 flexible board ❺ from the flexible connector ❹.
4) Attach the FP-89 flexible board ❺ to the flexible connector ❻ of the MODE SELECTOR III conversion connector ❸, then attach the 2-pin connector (white) ❽ of the loading motor to the 2-pin connector (white) ❼.

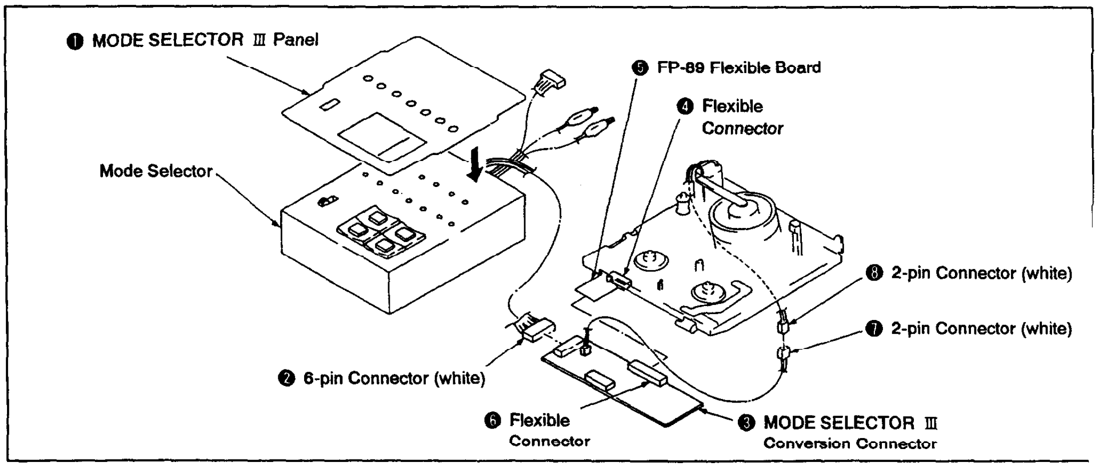

❶ MODE SELECTOR Ⅲ Panel
Mode Selector
❺ FP-89 Flexible Board
❹ Flexible Connector
❽ 2-pin Connector (white)
❼ 2-pin Connector (white)
❷ 6-pin Connector (white)
❻ Flexible Connector
❸ MODE SELECTOR Ⅲ Conversion Connector

Fig. 1-3.

1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.

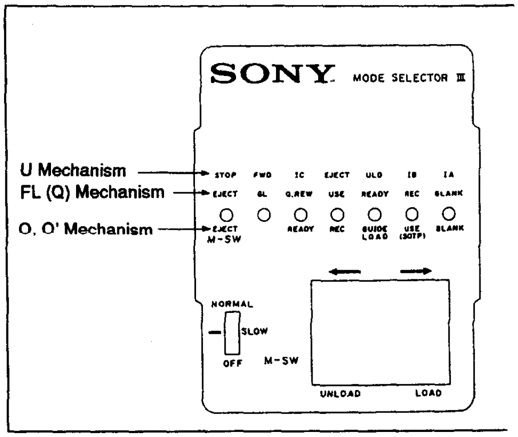

SONY MODE SELECTOR Ⅲ
U Mechanism
FL (Q) Mechanism
O, O' Mechanism
STOP FWD IC EJECT ULD IB IA
EJECT BL Q.REW USE READY REC BLANK
EJECT M-SW READY REC GUIDE LOAD USE (SOTP) BLANK
NORMAL
SLOW
OFF
M-SW
UNLOAD
LOAD

Fig. 1-4.

2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

2-1. ROTARY DRUM ASSEMBLY CLEANING

1) While pressing a piece of chamois leather (Ref. No. J-2) moistened in cleaning fluid (Ref. No. J-1) lightly against the rotary drum, turn the rotary upper drum slowly counter-clockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.
Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

2-2. TAPE PATH CLEANING

1) Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of chamois leather moistened in cleaning fluid (See Fig. 2-1).

2-3. DRIVE SYSTEM CLEANING

1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

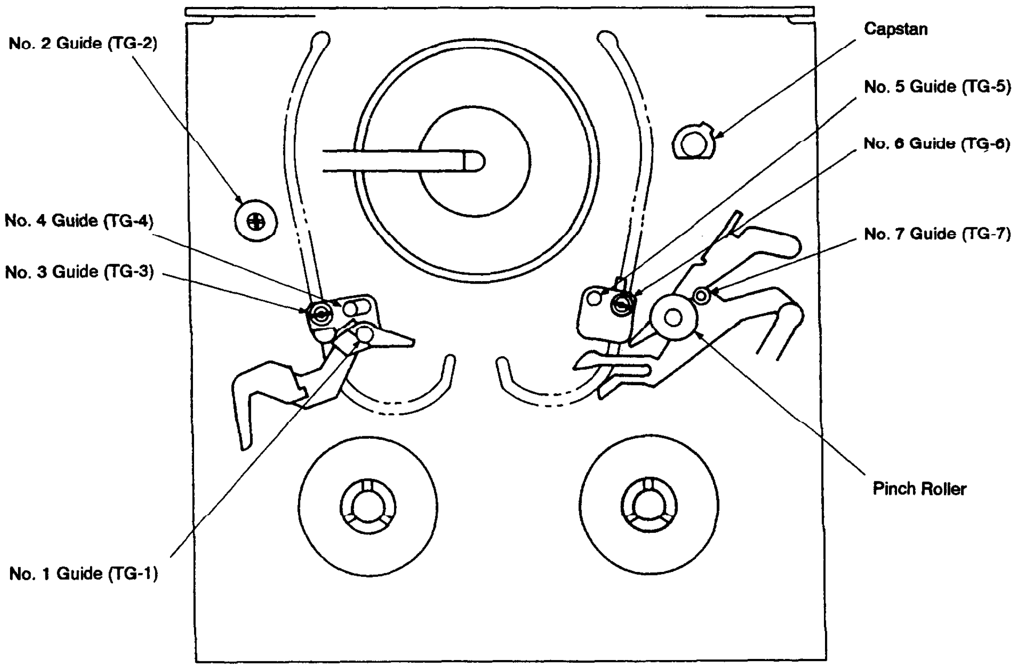


Fig. 2-1.

2-4. PERIODICAL CHECK ITEMS

○Cleaning ◎Lubrication ☆Check

Maintenance and Check Item		Operation time (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demag-netizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Do not oil.
	Rotary drum assembly cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Do not oil.
Drive System	Relay belt (short)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-866-01
	Relay belt (long)	–	☆	–	☆	–	☆	–	☆	–	☆	3-728-865-01
	Capstan shaft	–	◎	–	◎	–	◎	–	◎	–	◎	Take care that no oil gets on tape path surfaces.
	Idler pulley axle	–	◎	–	◎	–	◎	–	◎	–	◎	
	Loading motor	–	☆	–	☆	–	☆	–	☆	–	☆	1-541-612-11
Perfor-mance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	–	☆	–	☆	–	☆	–	☆	–	☆	
	Brake system	–	☆	–	☆	–	☆	–	☆	–	☆	
	FWD, RVS torque measurement	–	☆	–	☆	–	☆	–	☆	–	☆	

Notes: When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
  Specified oil: Part No. 7-661-018-01
  (Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

- Use the specified grease.
  Grease: Part No. 7-662-010-08
  (Sony grease SGL-701)

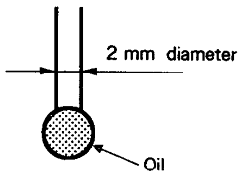


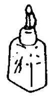
Fig. 2-2.

2-5. SERVICING TOOLS

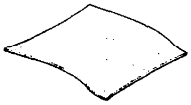
Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	–	
J-2	Chamois cloth	2-034-697-00	–	
J-3	Head demagnetizer	Commercially available	–	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-624-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope
Analog tester (20 kΩ)

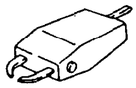
J-1



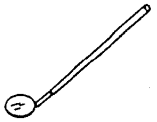
J-2



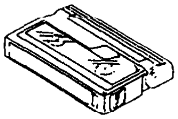
J-3



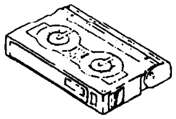
J-4



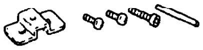
J-5



J-6

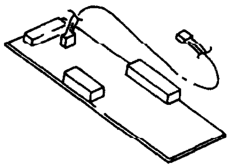


J-7

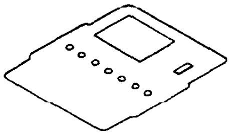


(Attached to the maintenance rotary upper drum)

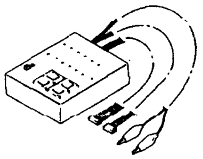
J-8



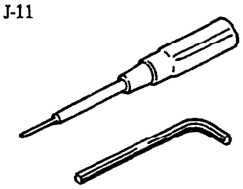
J-9



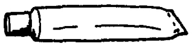
J-10



J-11



J-12



3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Notes:
- Use the mode selector (Ref. No. J-10) for procedures in this chapter.
- Modes within a frame ☐ are those set by pressing the buttons of the mode selector.

3-1. HC ROLLER ASSEMBLY

1. Removal (See Fig. 3-1.)

1) Remove the screw ❶, then remove the HC roller assembly ❷.

2. Installation (See Fig. 3-1.)

1) Align the two dowels ❸ attached to the HC roller assembly ❷ with the two holes ❹ in the mechanism chassis.
2) Secure the HC roller assembly ❷ with the screw ❶.

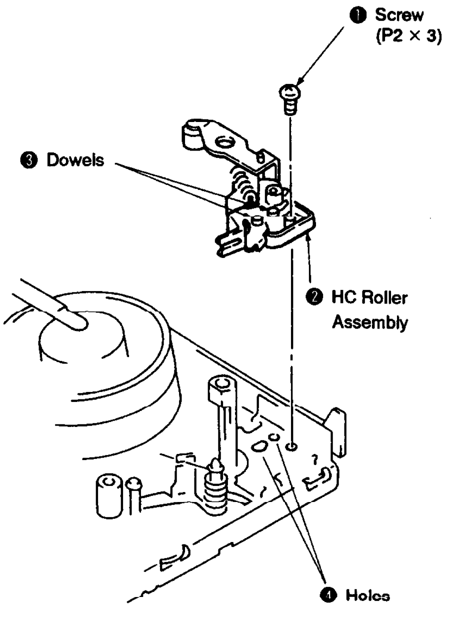

❶ Screw (P2 × 3)
❸ Dowels
❷ HC Roller Assembly
❹ Holes

Fig. 3-1.

3-2. GUIDE GUARD ASSEMBLY

1. Removal (See Fig. 3-2.)

Remove the screw ❶, then remove the guide guard assembly ❷.

2. Installation (See Fig. 3-2.)

1) Align the dowel ❸ attached to the guide guard assembly ❷ with the hole ❹.
2) Secure the guide guard assembly ❷ with the screw ❶.

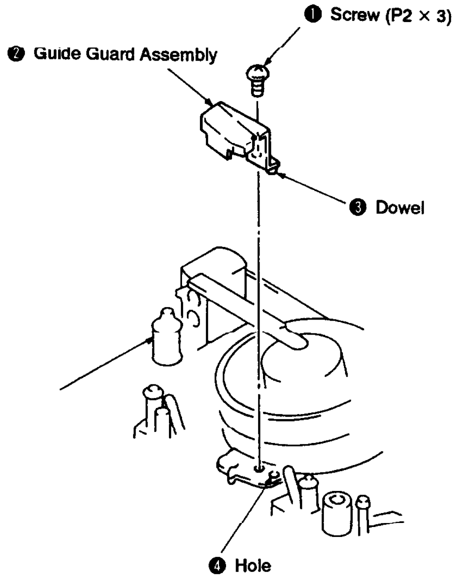

❶ Screw (P2 × 3)
❷ Guide Guard Assembly
❸ Dowel
❹ Hole

Fig. 3-2.

3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

1. Removal (See Fig. 3-3.)

1) Set the ULD mode.
2) Turn the stopper ❶ in the direction of the arrow Ⓐ as far as it will go.
3) Remove the two screws ❷, then remove the DC motor ❸.

2. Installation (See Fig. 3-3.)

1) Align the two screwed dowels ❹ with the two holes ❺, then engage the toothed part ❻ with the connecting gear ❼.
2) Secure the DC motor assembly ❸ with the two screws ❷.
3) Turn the stopper ❶ in the direction of the arrow Ⓑ as far as it will go.

Note:
- When engaging the gears, take care not to damage their teeth.
- Do not leave any clearance between the DC motor ❸ and the chassis.
- Do not touch the capstan motor axle*, the oil seal* and the rotor*.

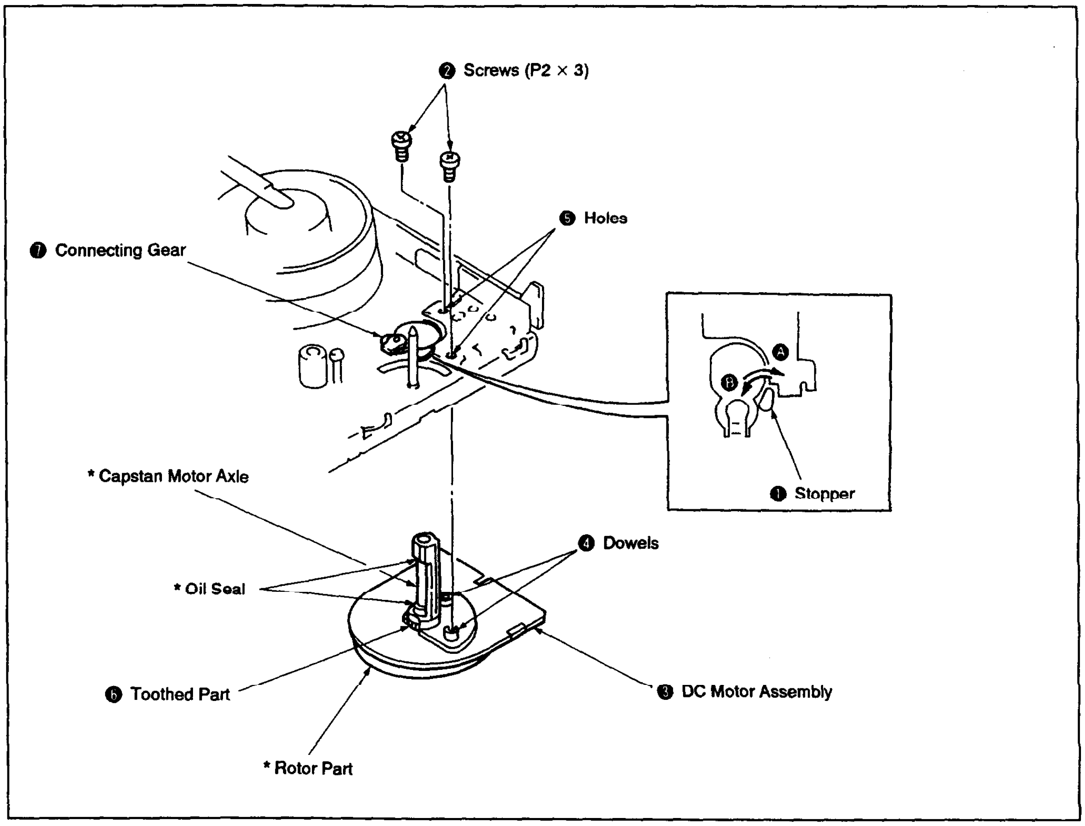

❷ Screws (P2 × 3)
❺ Holes
❼ Connecting Gear
Ⓐ
Ⓑ
❶ Stopper
* Capstan Motor Axle
❹ Dowels
* Oil Seal
❻ Toothed Part
❸ DC Motor Assembly
* Rotor Part

Fig. 3-3.

3-4. S BRAKE, T BRAKE

1. Removal (See Fig. 3-4.)

1) Remove the torsion coil spring (ST) ❶.
2) Remove the axle holding pin ❷, then remove the T brake ❸.
3) Remove the axle holding pin ❹, then remove the S brake ❺.

2. Installation (See Fig. 3-4.)

1) While fitting the toothed part ❻ into the notch ❼, mount the S brake ❺.
2) Insert the axle holding pin ❹.
3) Insert the axle ❽ to the S reel side of the brake release arm ❾ so that the Ⓐ part comes closer to the drum than part Ⓑ, and mount the T brake ❸.
4) Insert the axle holding pin ❷.
5) Insert the torsion coil spring (ST) ❶ below the claw ⓫ of the axle ❿, then hook it to two claws ⓬.

Note: Confirm that the claws of axle holding pins ❷ and ❹ are not broken before assembling.

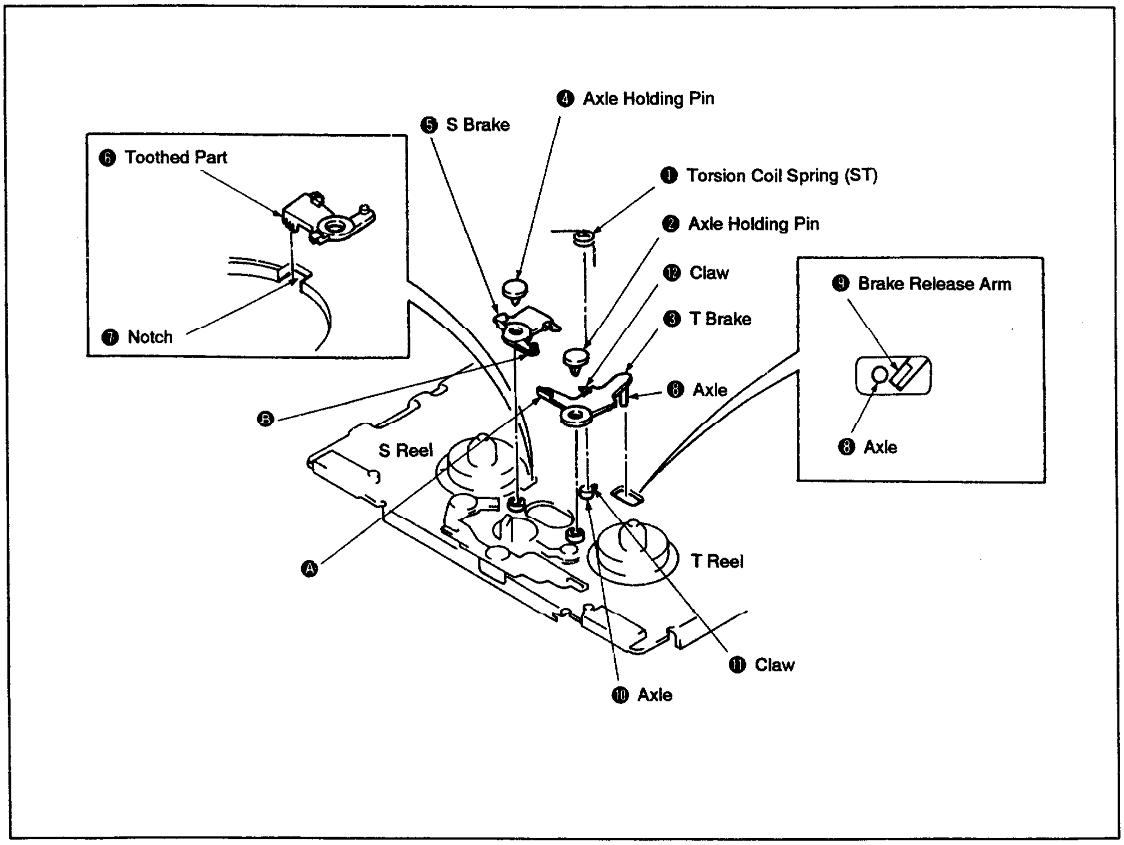

❻ Toothed Part
❼ Notch
❺ S Brake
❹ Axle Holding Pin
❶ Torsion Coil Spring (ST)
❷ Axle Holding Pin
⓬ Claw
❸ T Brake
❾ Brake Release Arm
❽ Axle
❽ Axle
Ⓑ
S Reel
Ⓐ
T Reel
⓫ Claw
❿ Axle

Fig. 3-4.

3-5. LB BRAKE, AXLE HOLDING PINS

1. Removal (See Fig. 3-5.)

1) Remove the screw ❶, then remove the TL holding plate ❷.
2) Remove the axle holding pin ❸, then remove the LB brake ❹.
3) Remove the axle holding pin ❺, then remove the LB lever ❻.

2. Installation (See Fig. 3-5.)

1) Mount the LB lever ❻ matching it to pin ❼ of the LB gear, then secure it with the axle holding pin ❺.
2) Insert the pin ❽ into the notch ❾ of the LB lever ❻, then mount the LB brake ❹ while inserting the toothed part ❿ into the notch ⓫.
3) Insert the axle holding pin ❸.
4) Align the dowel ⓬ with the hole ⓭, then mount the TL holding plate and secure it with the screw ❶.

Note: Confirm that the claws of axle holding pins ❸ and ❺ are not broken before assembling.

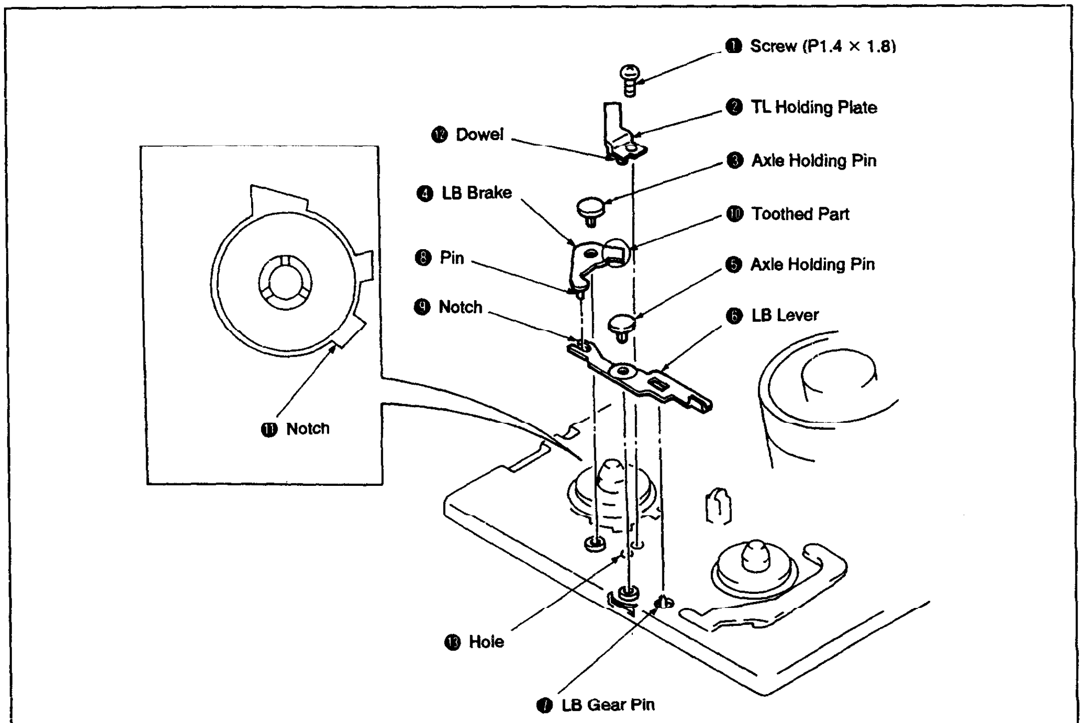

❶ Screw (P1.4 × 1.8)
❷ TL Holding Plate
⓬ Dowel
❸ Axle Holding Pin
❹ LB Brake
❿ Toothed Part
❽ Pin
❺ Axle Holding Pin
❾ Notch
❻ LB Lever
⓫ Notch
⓭ Hole
❼ LB Gear Pin

Fig. 3-5.

3-6. LB RELEASE ARM

1. Removal (See Fig. 3-6.)

1) While pushing the claw ❶ in the direction of the arrow, remove the LB release arm ❷.

2. Installation (See Fig. 3-6.)

1) Fit the LB release arm ❷ to the axle ❸, insert protrusions ⓐ, ⓑ, ⓒ, ⓓ into the three holes ❹, then secure with the claw ❶.

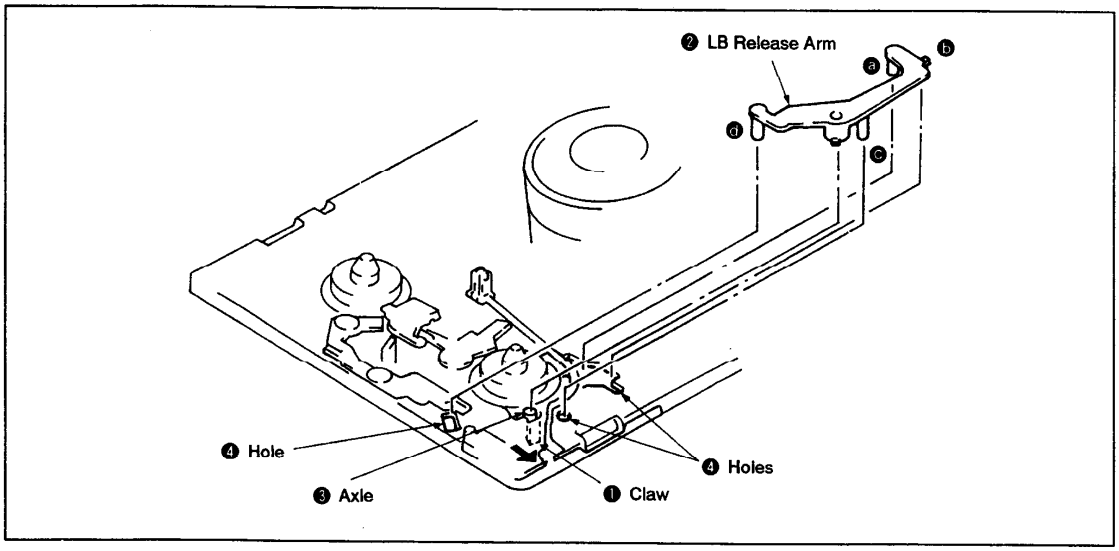

❷ LB Release Arm
ⓐ
ⓑ
ⓓ
ⓒ
❹ Hole
❹ Holes
❸ Axle
❶ Claw

Fig. 3-6.

3-7. RK STOPPER, RK STOPPER ARMS

1. Removal (See Fig, 3-7.)

1) Remove the torsion coil spring (RK) ❶.
2) Open the chassis claw ❷, then remove the RK stopper arm ❸.
3) Remove the RK stopper ❹.

2. Installation (See Fig. 3-7.)

1) Mount the RK stopper ❹ onto the axle ❺.
2) Mount the RK stopper arm ❸ onto the axle ❻, insert Pin ❿ into hole ⓫, then hook the claw ❷ of the chassis to the hole ❼.
3) Insert the torsion coil spring (RK) ❶ into the axle ❺, then hook it to claws ❽ and ❾.

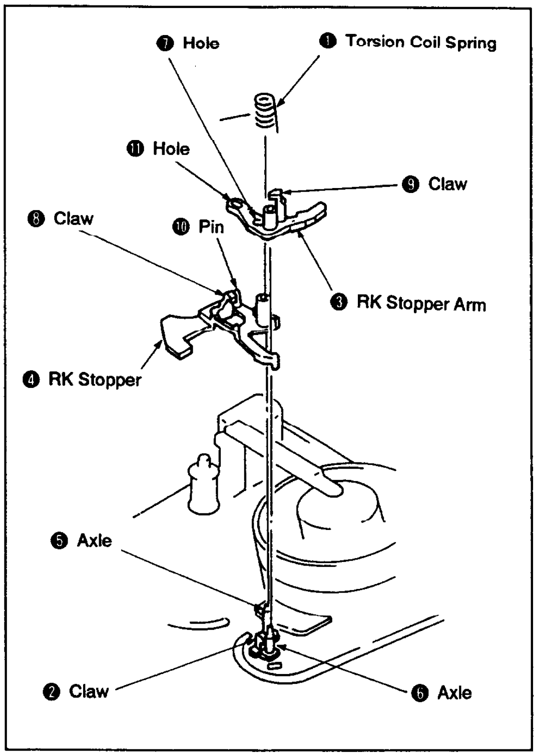

❼ Hole
❶ Torsion Coil Spring
⓫ Hole
❾ Claw
❽ Claw
❿ Pin
❸ RK Stopper Arm
❹ RK Stopper
❺ Axle
❷ Claw
❻ Axle

Fig. 3-7.

3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

1. Removal (See Fig. 3-8.)

1) Set the [IB] mode.
2) Remove the stopper washer ❶, then remove the pinch arm assembly ❷.
3) Bend the claw ❹ inside hole ❸ in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring ❺.
4) Remove the TG-7 arm assembly ❻.

2. Installation (See Fig. 3-8.)

1) Grease the inner surfaces of hole ❼ (See Fig. A).
2) Insert the axle ❽ of the TG-7 arm assembly ❻ into the hole ❼.
3) Grease the shaded section ⓐ (See Fig. A).
4) Insert the TG-7 plate spring ❺ into the hole ❸, then secure it with the claw ❹.
5) Apply half a drop of oil to the axle ❾ (See Fig. B).
6) Fit the pinch arm assembly ❷ to the axle ❾ and insert the pinch roller sub arm assembly tab ❿ into the ⓑ part.
7) Install the stopper washer ❶.

Note:
- Take care not to grease the screw ⓫ of the TG-7 arm assembly ❻ (See Fig. A).
- When fitting the pinch arm assembly ❷ to the axle ❾, make sure that it does not touch the TG-7 guide ⓬ or the rubber roller ⓭.
- After assembling, be sure to perform tape path adjustment as described in section 4.

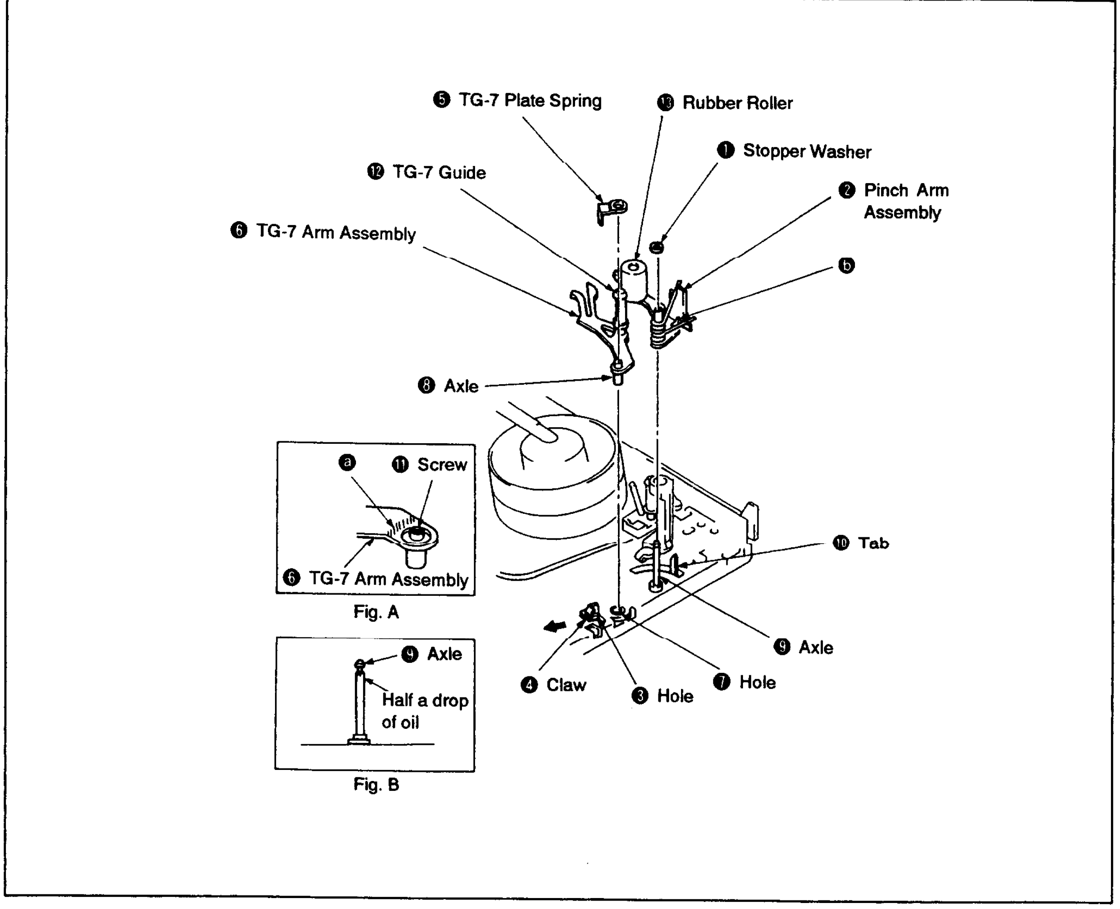

❺ TG-7 Plate Spring
⓭ Rubber Roller
❶ Stopper Washer
⓬ TG-7 Guide
❷ Pinch Arm Assembly
❻ TG-7 Arm Assembly
ⓑ
❽ Axle
ⓐ
⓫ Screw
❻ TG-7 Arm Assembly
❿ Tab
❾ Axle
❹ Claw
❸ Hole
❼ Hole
❾ Axle
Half a drop of oil

Fig. A

Fig. B

Fig. 3-8.

3-9. TG-2 ASSEMBLY

1. Removal (See Fig. 3-9.)

1) Remove the TG-2 upper flange assembly ❶.
2) Remove the TG-2 roller ❷, the TG-2 sleeve ❸, the TG-2 lower flange ❹ and the compression spring ❺.

2. Installation (See Fig. 3-9.)

1) Mount the compression spring ❺, the TG-2 lower flange ❹, the TG-2 sleeve ❸ and the TG-2 roller ❷ to the axle.
2) Secure the TG-2 upper flange ❶ to the axle by rotating it 4 to 6 turns.

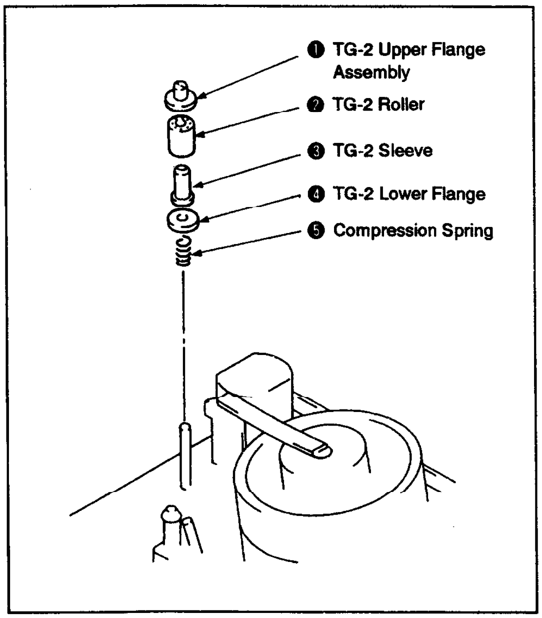

❶ TG-2 Upper Flange Assembly
❷ TG-2 Roller
❸ TG-2 Sleeve
❹ TG-2 Lower Flange
❺ Compression Spring

Fig. 3-9.

3. TG-2 Height Preset (see Fig. 3-10.)

1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by turning the TG-2 upper flange ❶.

Note: After adjustment, be sure to perform tape path adjustment as described in section 4.

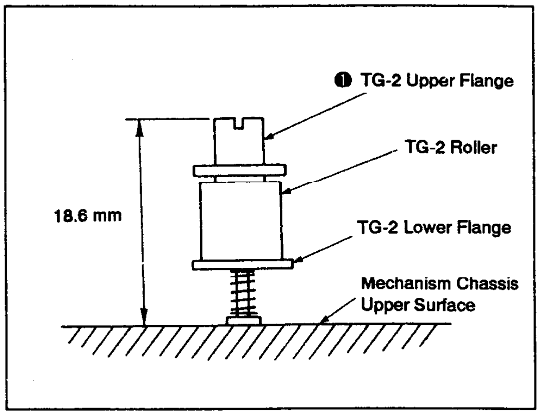

❶ TG-2 Upper Flange
TG-2 Roller
18.6 mm
TG-2 Lower Flange
Mechanism Chassis Upper Surface

Fig. 3-10.

3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

1. Removal (See Fig. 3-11.)

1) Remove the S brake and T brake as described in section 3-4.
2) Remove the TL holding plate as described in section 3-5.
3) Remove the tension regulator band assembly as described in section 3-11.
4) Remove the S reel table assembly ❶.
5) Turn the stopper ❷ approx. 90 ° in the direction of the arrow Ⓐ.
6) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, remove the T reel table assembly ❹.

2. Installation (See Fig. 3-11.)

1) Apply half a drop of oil to the axle ❺ (See Fig. A).
2) Move the RK gear ❻ in the direction of the arrow Ⓒ and the TS brake ❼ in the direction of the arrow Ⓓ, putting them out of the way.
3) While sliding the LB release arm ❸ in the direction of the arrow Ⓑ, mount the T reel table assembly ❹ onto the axle ❺, then turn the stopper ❷ in the direction of the arrow Ⓔ as far as it will go.
4) Apply half a drop of oil to the axle ❽ (See Fig. B).
5) Move the RK gear ❻ in the direction of the arrow Ⓕ, the UL brake ❾ in the direction of the arrow Ⓖ and the LB brake ❿ in the direction of the arrow Ⓗ, putting them out of the way.
6) Mount the S reel table ❶ onto the axle ❽.
7) Mount the tension regulator band assembly as described in section 3-11.
8) Mount the TL holding plate as described in section 3-5.
9) Mount the S brake and T brake assemblies as described in section 3-4.

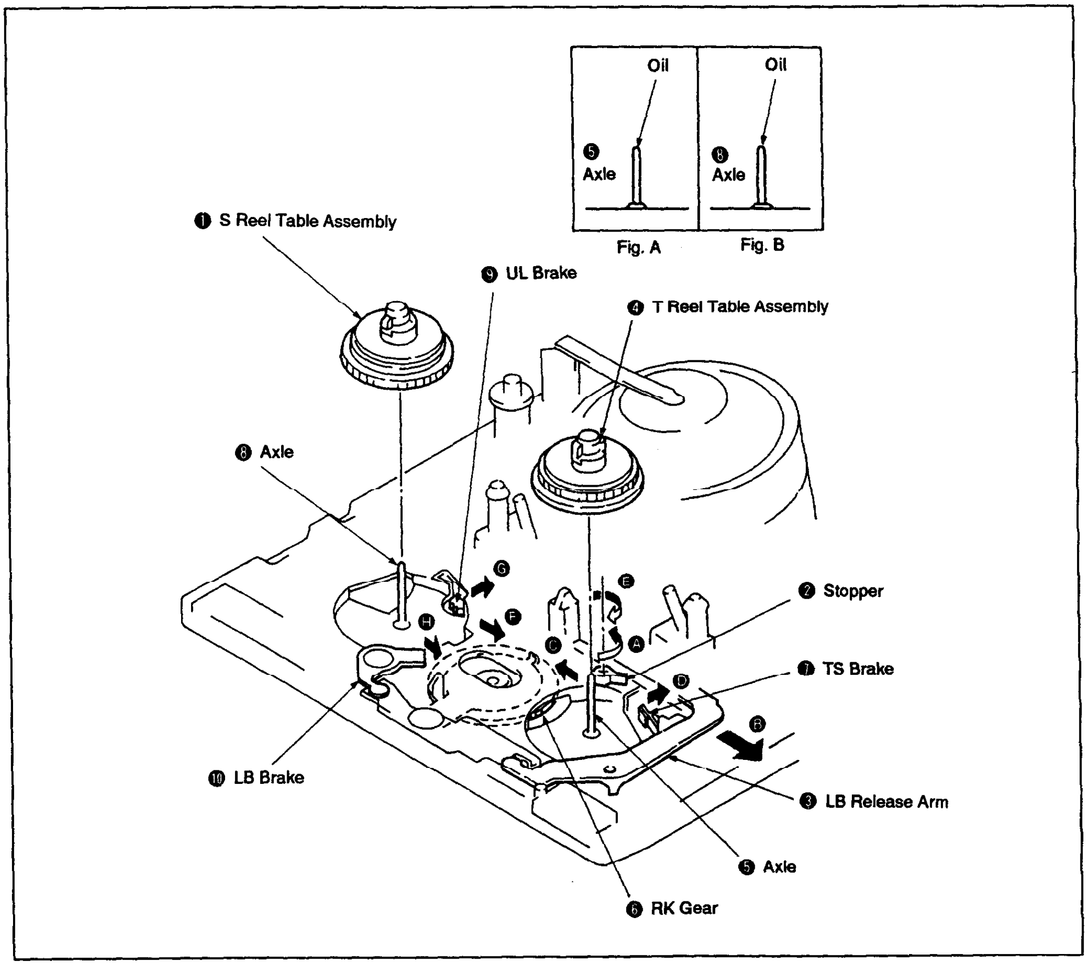

Oil
❺ Axle
Fig. A
Oil
❽ Axle
Fig. B
❶ S Reel Table Assembly
❾ UL Brake
❹ T Reel Table Assembly
❽ Axle
Ⓖ
Ⓔ
Ⓗ
Ⓕ
Ⓒ
Ⓐ
Ⓓ
Ⓑ
❷ Stopper
❼ TS Brake
❿ LB Brake
❸ LB Release Arm
❺ Axle
❻ RK Gear

Fig. 3-11.

3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

1. Removal (See Fig. 3-12.)

1) Remove the TL holding plate as described in section 3-5.
2) Remove the screw ❶.
3) Using a thin screwdriver or the like, remove the tension regulator band assembly ❹ from the axle ❸ of tension regulator arm assembly ❷.
4) Remove the tension spring ❺.
5) Remove the stopper washer ❻ from the back of the mechanism chassis, then remove the tension regulator arm assembly ❷.
6) Open the claw ❼, then remove the adjust arm ❽.

Note: When removing the tension regulator band assembly ❹, take care not to twist or bend it, and not to touch the felt surface ❾.

2. Installation (See Fig. 3-12.)

1) Engage the adjust arm ❽ in the position shown in Fig. A, then close the claw ❼.
2) Apply half a drop of oil to the hole ❿.
3) Mount the tension regulator arm assembly ❷, then insert it into the slot ⓫ so that the ⓐ part comes to the arrow Ⓐ side of the switch lever assembly (See Fig. B).
4) While holding the tension regulator arm assembly ❷ from the mechanism chassis front, secure it with the stopper washer ❻ from the back.
5) Hook the R hook of the tension spring ❻ to the adjust arm ❽ as shown in the figure, then hook the opposite end to the tension regulator arm assembly ❷.
6) Mount the tension regulator band assembly ❹ onto the axle ❸ of tension regulator arm assembly ❷, and place it so that the felt surface ❾ comes against the shaded portion of the S reel table assembly ⓬.
7) Mount the tension regulator plate ⓭ of the tension regulator band assembly ❹ so that it is aligned with the dowel ⓮ of the mechanism chassis, then secure it temporarily with the screw ❶.
8) Mount the TL holding plate as described in section 3-5.
9) Adjust tension regulator FWD position as described in section 3-12.
10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly ❷, take care not to twist or bend it, and not to touch the felt surface ❾.

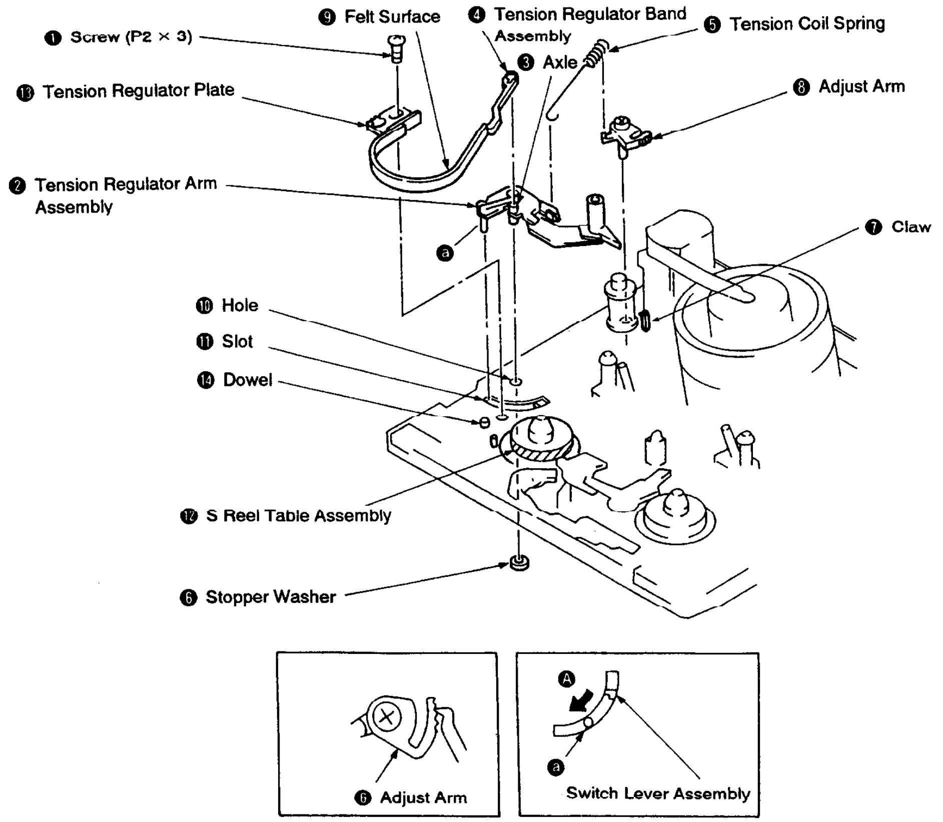

❾ Felt Surface
❹ Tension Regulator Band Assembly
❺ Tension Coil Spring
❶ Screw (P2 × 3)
❸ Axle
⓭ Tension Regulator Plate
❽ Adjust Arm
❷ Tension Regulator Arm Assembly
❼ Claw
ⓐ
❿ Hole
⓫ Slot
⓮ Dowel
⓬ S Reel Table Assembly
❻ Stopper Washer
❽ Adjust Arm
Ⓐ
ⓐ
Switch Lever Assembly

Fig. A

Fig. B

Fig. 3-12.

3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

1) Load a cassette tape and set the $\boxed{\text{FWD}}$ mode.
2) Confirm whether the distance between ⓐ part of the tension regulator arm ❶ and the groove ❷ of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
3) Loosen the fixing screw ❹ of the tension regulator band assembly ❸.
4) Slide the tension regulator plate ❺ in the direction of the arrow Ⓐ if the measured distance is over the specified range, and in the direction of the arrow Ⓑ if it is under that range. Then, fix it with the screw ❹.
5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

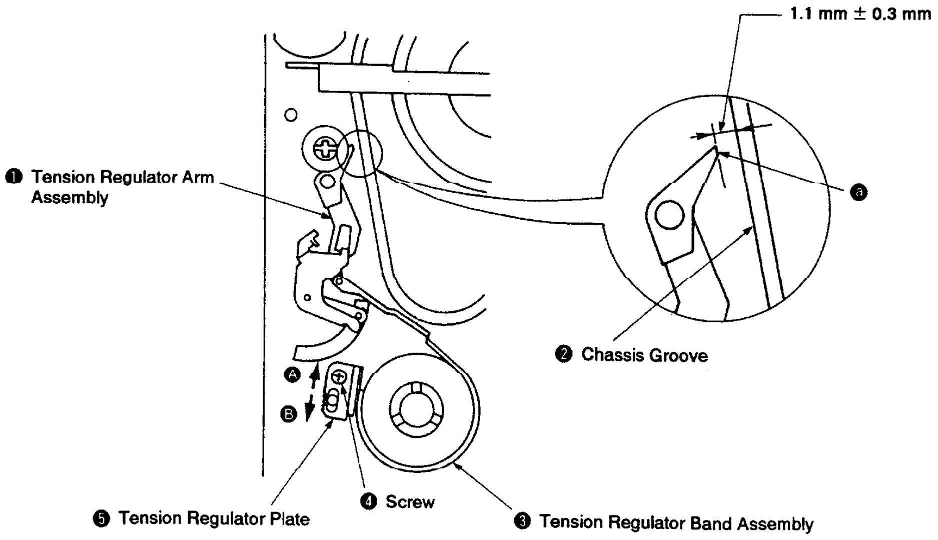

1.1 mm ± 0.3 mm
❶ Tension Regulator Arm Assembly
ⓐ
❷ Chassis Groove
Ⓐ
Ⓑ
❹ Screw
❺ Tension Regulator Plate
❸ Tension Regulator Band Assembly

Fig. 3-13.

3-13. DRUM ASSEMBLY, DEW SENSOR

1. Removal (See Fig. 3-14.)

1) Set the EJECT mode.
2) Remove the flexible board ❶ and the two connectors ❷.
3) Remove the guide guard assembly as described in section 3-2.
4) Remove the screw ❸, then remove the axle ground terminal ❹.
5) Remove the three screws ❺, then remove the drum assembly ❻ from the mechanism chassis.
6) Remove the connector ❿
7) Remove the screw ❼, then remove the dew sensor ❽.

Note:
- When removing the drum assembly ❻ from the mechanism chassis, take care not to cut the flexible board ❶ or the harness.
- Take care not to touch the head tip ❾.

2. Installation (See Fig. 3-14.)

1) Insert part 🅐 of the dew sensor ❽ into the notch ⓫ of the mechanism chassis, then secure it with the screw ❼.
2) Mount the connector ❿.
3) Clamp the harness ⓯ of the dew sensor ❽ with the reinforcing the claw ⓰ of the plate SS assembly (See Fig. A).
4) Insert the connector ❷ and the flexible board ❶ into the hole ⓬ of the mechanism chassis, align the drum assembly ❻ with the two dowels ⓭ and secure it with the three screws ❺.
5) Align the axle ground terminal ❷ with the two dowels ⓮ of the mechanism chassis and secure it with the screw ❸.
6) Mount the guide guard assembly as described in section 3-2.
7) Mount the two connectors ❷ and the flexible board ❶.

Note:
- Take care not to cut the flexible board ❶ or the harness ⓯.
- Take care not to touch the head tip ❾.
- After assembling, be sure to perform Tape Path Adjustment following instructions in section 4.

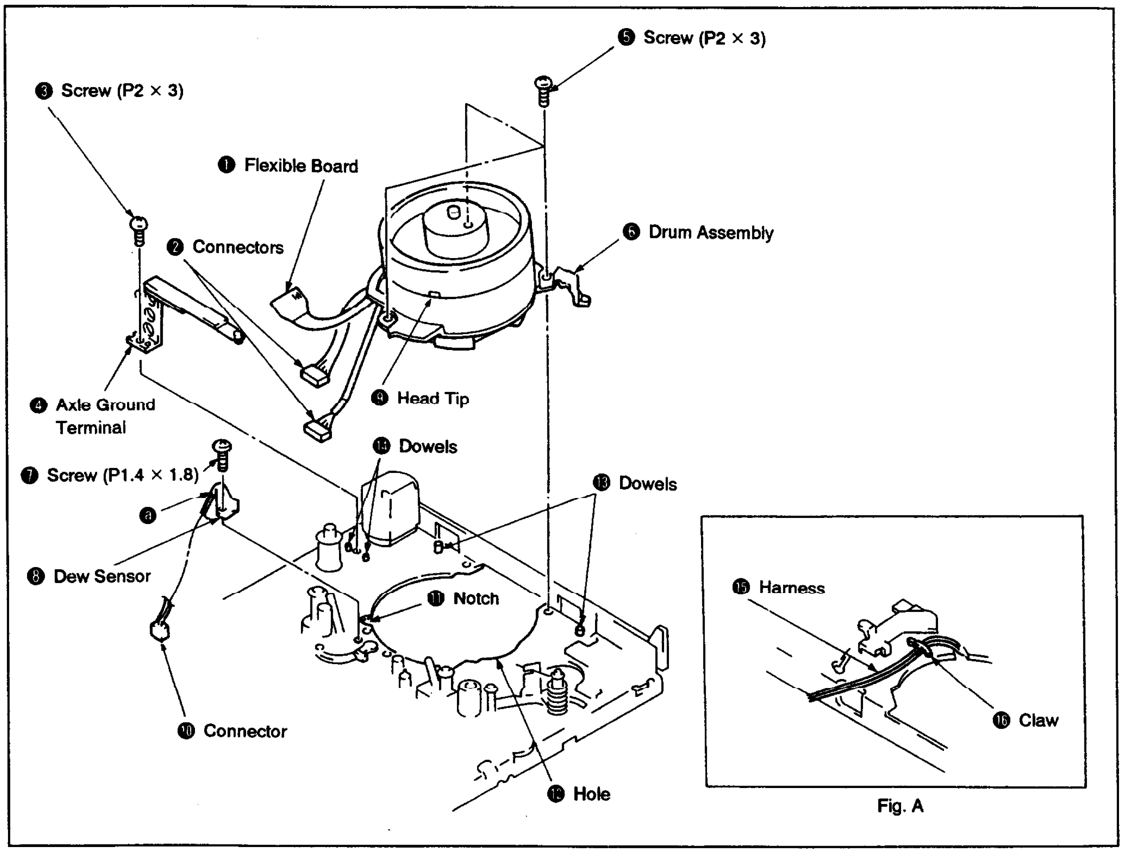

❺ Screw (P2 × 3)
❸ Screw (P2 × 3)
❶ Flexible Board
❷ Connectors
❻ Drum Assembly
❹ Axle Ground Terminal
❾ Head Tip
⓮ Dowels
❼ Screw (P1.4 × 1.8)
⓭ Dowels
🅐
❽ Dew Sensor
⓫ Notch
⓯ Harness
❿ Connector
⓰ Claw
⓬ Hole
Fig. A

Fig. 3-14.

3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

1. Removal (See Fig. 3-15.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Set the STOP mode.
3) Remove the claw ❶, then remove the eject lever ❷.
4) Remove the stopper washer ❸, then remove the switch lever assembly ❹.
5) Remove the pinch roller load spring ❺.
6) Remove the stopper washer ❻, then remove the pinch roller sub arm assembly ❼.

2. Installation (See Fig. 3-15.)

1) Grease the axle ❽ (See Fig. A).
2) Assemble by inserting ⓐ part of the pinch roller sub arm assembly ❼ into the slot ❾, then insert the pin ❿ into the loading lever assembly notch ⓫.
3) Secure with the stopper washer ❻.
4) Mount the pinch roller load spring ❺ by catching its ⓑ end between the claw ⓬ and the chassis side and its ⓒ end to the claw ⓬.
5) Apply half a drop of oil to the axle ⓭ (See Fig. B).
6) Align the groove ⓮ of the switch lever assembly ❹ with the mode detector switch protrusion ⓯, mount it on the axle ⓭, then insert the pin ⓰ into the drive gear (left) assembly ⓱ outer groove.
7) Secure with the stopper washer ❸.
8) Mount the eject lever ❷ and close the claw ❶.
9) Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly ❹ onto the axle ⓭ with the tension regulator arm assembly installed, set the pin ⓰ to the arrow Ⓐ side of the switch lever assembly ❹.

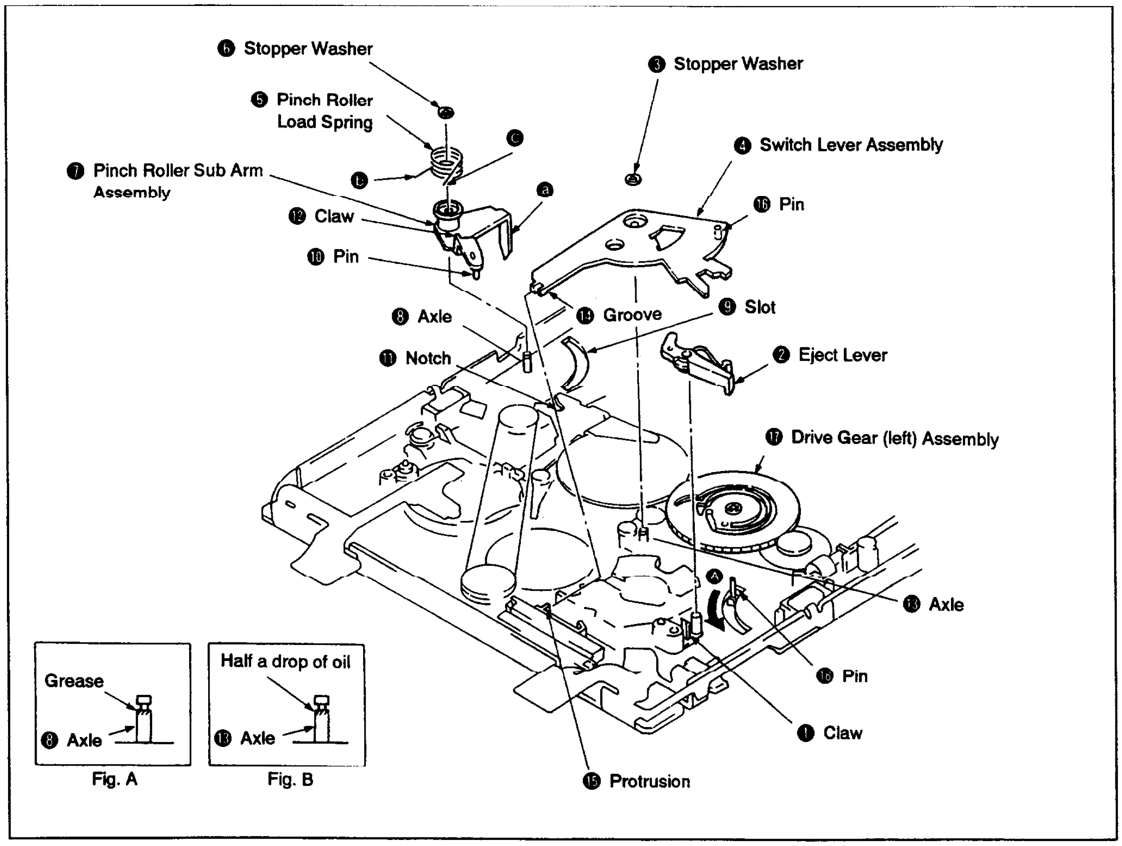

❻ Stopper Washer
❺ Pinch Roller Load Spring
❼ Pinch Roller Sub Arm Assembly
ⓒ
ⓑ
ⓐ
⓬ Claw
❿ Pin
❽ Axle
⓫ Notch
❸ Stopper Washer
❹ Switch Lever Assembly
⓰ Pin
⓮ Groove
❾ Slot
❷ Eject Lever
⓱ Drive Gear (left) Assembly
Ⓐ
⓭ Axle
⓰ Pin
❶ Claw
⓯ Protrusion
Grease
❽ Axle
Fig. A
Half a drop of oil
⓭ Axle
Fig. B

Fig. 3-15.

3-15. TIMING BELT (L) , RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

1. Removal (See Fig. 3-16.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the pinch roller sub arm assembly as described in section 3-14.
3) Set the STOP mode.
4) Remove the stopper washer ❶ , then remove the RC gear assembly ❷ from the axle ❹ with the timing belt (L) ❸ attached.
5) Remove the timing belt (L) ❸ from the idler pulley assembly ❺ .
6) Remove the stopper washer ❻ and remove the loading lever assembly ❽ while pushing the claw ❼ in the direction of the arrow 🅐 .
7) Turn the stopper ❾ approx. 90 ° in the direction of the arrow 🅑 .
8) Remove the connecting gear assembly ⓫ from the axle ⓰ with the timing belt (S) ❿ attached.
9) Remove the timing belt (S) ❿ from the idler pulley assembly ❺ .

Note: When removing the connecting gear ⓫ , take care not touch the flange section ⓑ .

2. Installation (See Fig. 3-16.)

1) Apply half a drop of oil to the axle ⓰ (See Fig. F).
2) Hook one end of the timing belt (S) ❿ onto the connecting gear assembly ⓫ and the other end onto gear ⓓ of the idler pulley assembly ❺ . (Refer to the figure.)
3) Mount the connecting gear assembly ⓫ with the timing belt (S) ❿ attached to the axle ⓰ .
4) Turn the stopper ❾ in the direction of the arrow 🅒 as far as it will go.
5) Apply half a drop of oil to the axle ⓬ (See Fig. A).
6) Fit the loading lever assembly ❽ to the axle ⓬ , secure the ⓐ part with the claw ❼ and place the pin ⓭ into the groove of the drive gear (right) assembly ⓮ .
7) Install the stopper washer ❻ .
8) Place the timing belt (L) ❸ around the gears of the RC gear assembly ❷ indicated in Fig. B, and its opposite side around the gear ⓒ of the idler pulley assembly ❺ . (See Fig. E.)
9) Mount the RC gear assembly ❷ onto the axle ❹ with the timing belt (L) ❸ attached, and engage it with the gear of the RK gear assembly ⓯ .
10) Install the stopper washer ❶ .
11) Grease parts of the loading lever assembly ❽ indicated in Fig. C.
12) Mount the pinch roller sub arm assembly as described in section 3-14.
13) Mount the DC motor (capstan motor) as described in section 3-3.

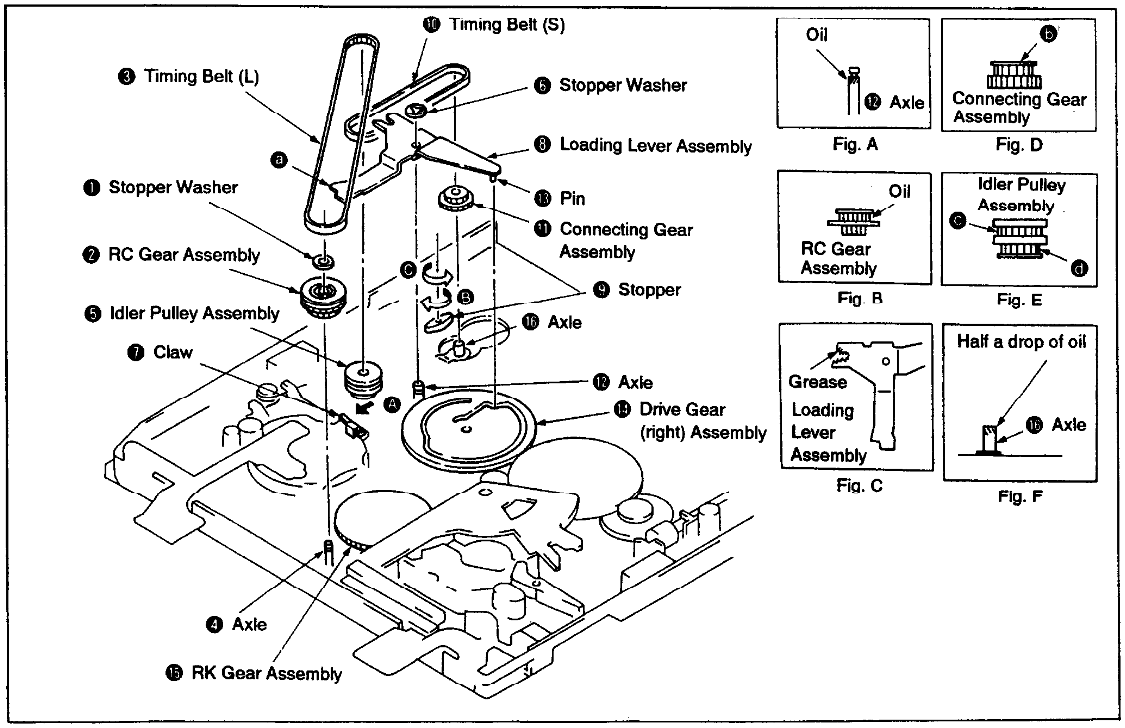

❿ Timing Belt (S)
❸ Timing Belt (L)
❻ Stopper Washer
❽ Loading Lever Assembly
ⓐ
❶ Stopper Washer
⓭ Pin
⓫ Connecting Gear Assembly
❷ RC Gear Assembly
🅒
🅑
❾ Stopper
❺ Idler Pulley Assembly
⓰ Axle
❼ Claw
⓬ Axle
🅐
⓮ Drive Gear (right) Assembly
❹ Axle
⓯ RK Gear Assembly
Oil
⓬ Axle
Fig. A
ⓑ
Connecting Gear Assembly
Fig. D
Oil
RC Gear Assembly
Fig. B
Idler Pulley Assembly
ⓒ
ⓓ
Fig. E
Grease
Loading Lever Assembly
Fig. C
Half a drop of oil
⓰ Axle
Fig. F

Fig. 3-16.

3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

1. Removal (See Fig. 3-17.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
4) Set the STOP mode.
5) Remove the stopper washer ❶, then remove the idler pulley ❷.
6) Open the claw ❸, then remove the TS brake assembly ❹.
7) Remove the torsion coil spring (LB) ❺.
8) Remove the stopper washer ❻, then remove the LB gear assembly ❼.
9) Remove the RK gear assembly ❽.

Note: When removing the idler pulley ❷, take care not to touch the flange section ⓐ. (See Fig. C.)

2. Installation (See Fig. 3-17.)

1) Apply half a drop of oil to the axle ❾ (See Fig. A).
2) Mount the RK gear assembly ❽ onto the axle ❾, keeping it in horizontal position.
3) Apply half a drop of oil to the axle ❿ (See Fig. B).
4) Mount the LB gear assembly ❼ onto the axle ❿ and secure it with the stopper washer ❻.
5) Insert the torsion coil spring (LB) ❺ into the axle ⓫, then hook it to the mechanism chassis notch ⓬ and to the tab ⓭.
6) Mount the TS brake assembly ❹ and close the claw ❸.
7) Apply half a drop of oil to the axle ⓰ (See Fig. D).
8) Mount the idler pulley ❷ onto the axle ⓰, then secure it with the stopper washer ❶.
9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
10) Mount the switch lever assembly as described in section 3-14.
11) Mount the DC motor (capstan motor) as described in section 3-3.

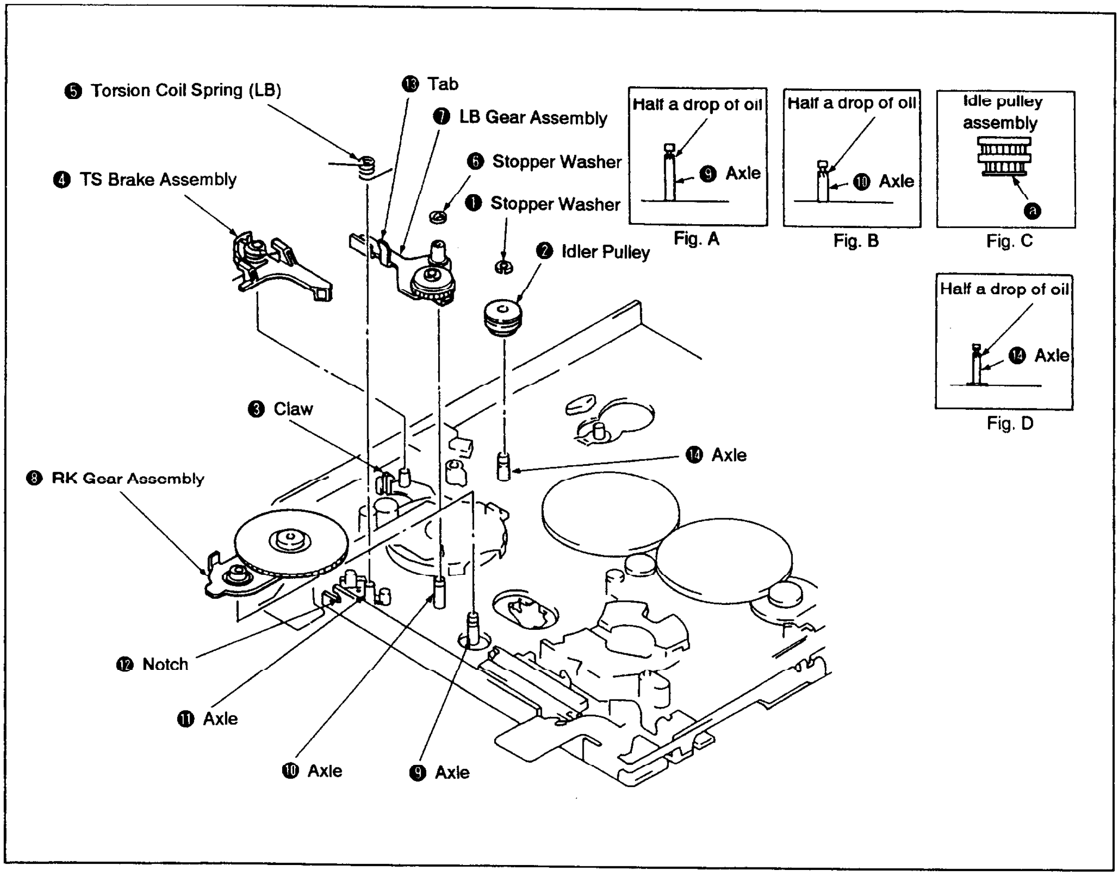

❺ Torsion Coil Spring (LB)
⓭ Tab
❼ LB Gear Assembly
❻ Stopper Washer
❹ TS Brake Assembly
❶ Stopper Washer
❷ Idler Pulley
Half a drop of oil
❾ Axle
Fig. A
Half a drop of oil
❿ Axle
Fig. B
Idle pulley assembly
ⓐ
Fig. C
Half a drop of oil
⓮ Axle
Fig. D
❸ Claw
⓮ Axle
❽ RK Gear Assembly
⓬ Notch
⓫ Axle
❿ Axle
❾ Axle

Fig. 3-17.

3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

1. Removal (See Fig. 3-18.)

1) Remove the switch lever assembly as described in section 3-14.
2) Remove the stopper washer ❶, then remove the UL gear ❷.
3) Remove the UL arm ❸, the 1.6 mm-diameter poly washer ❹ and the LB plate spring ❺.
4) Remove the UL brake ❻.

2. Installation (See Fig. 3-18.)

1) Mount the UL brake ❻.
2) Apply half a drop of oil to the axle ❼ (See Fig. A).
3) Mount the LB plate spring ❺ to the axle ❼ as shown in Fig. B, then install the 1.6mm-diameter poly washer ❹.
4) Mount the UL arm ❸ to the axle ❼ so that the protrusion ❽ comes into the groove ❾ of the UL brake ❻.
5) Mount the UL gear ❷ to the axle ❼ and engage it with the gear of the drive gear (left) assembly ❿.
6) Install the stopper washer ❶.
7) Mount the switch lever assembly as described in section 3-14.

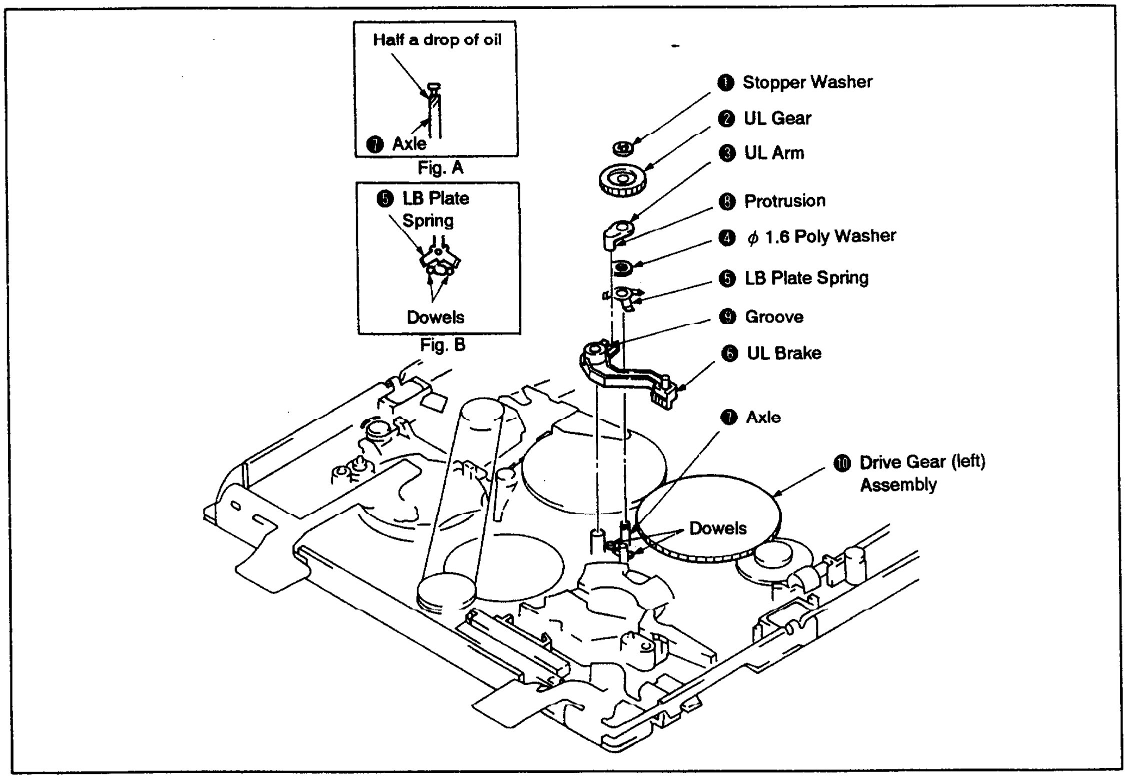

Half a drop of oil
❼ Axle
Fig. A
❺ LB Plate Spring
Dowels
Fig. B
❶ Stopper Washer
❷ UL Gear
❸ UL Arm
❽ Protrusion
❹ ϕ 1.6 Poly Washer
❺ LB Plate Spring
❾ Groove
❻ UL Brake
❼ Axle
❿ Drive Gear (left) Assembly
Dowels

Fig. 3-18.

3-18. COASTER (RIGHT) ASSEMBLY, DRIVE GEAR (RIGHT) ASSEMBLY

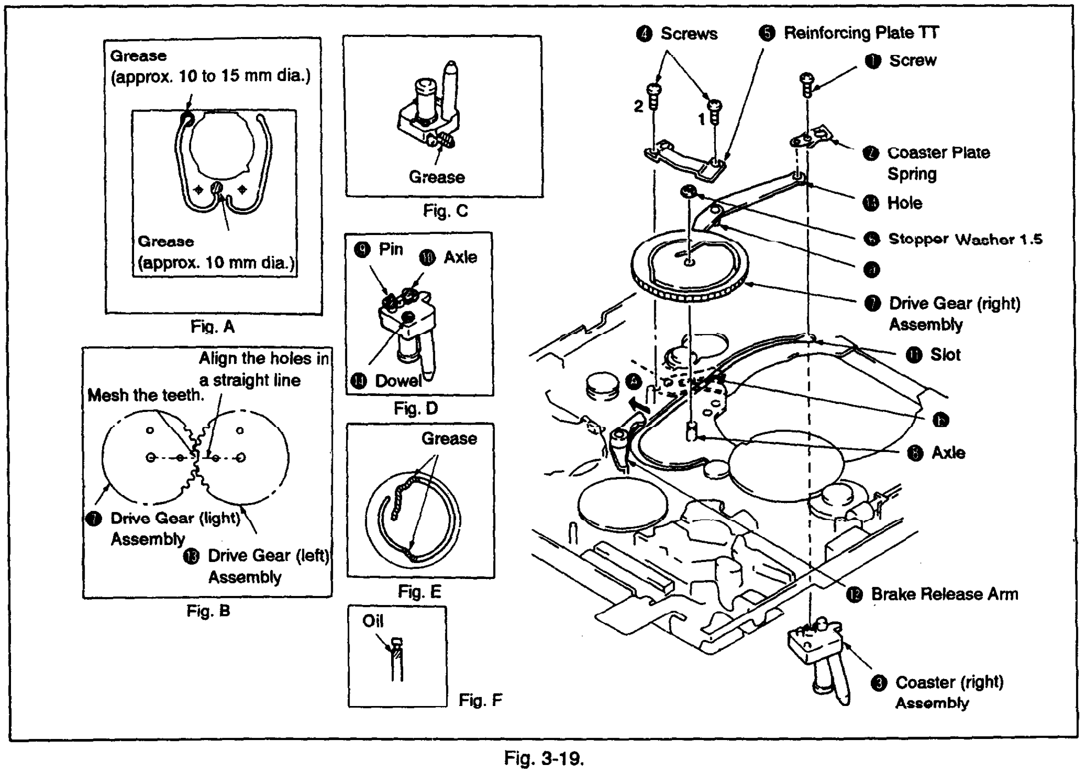
1. Removal (See Fig. 3-19.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum unit as described in section 3-13.
3) Remove the switch lever assembly as described in section 3-14.
4) Remove the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Set the STOP mode.
6) Remove the screw ❶ , then remove the coaster plate spring ❷ and the coaster (right) assembly ❸ .
7) Remove the two screws ❹ , then remove the reinforcing plate TT ❺ .
8) Remove the stopper washer 1.5 ❻ , then remove the drive gear (right) assembly ❼ .

2. Installation (See Fig. 3-19.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. F).
3) Grease pin ❾ , axle ❿ and dowel ⓮ of the coaster (right) assembly ❸ (See Fig. D).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Move the brake release arm ⓬ in the direction of the arrow Ⓐ to put it out of the way.
6) Mount the drive gear (right) assembly ❼ to the axle ❽ , and engage it with the drive gear (left) assembly ⓭ as shown in Fig. B.
7) Align the ⓐ part with the ⓑ part, and the hole ⓮ with the pin ❾ of the coaster (right) assembly ❸ .
8) Install the stopper washer 1.5 ❻ .
9) Mount by aligning the coaster plate spring ❷ with the axle ❿ of the coaster (right) assembly ❸ and pin ❾ , then secure with the screw ❶ .
10) Mount the reinforcing plate TT ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
11) Grease the points indicated in Figs. C and E.
12) Mount the timing belt (L) , the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly as described in section 3-14.
14) Mount the drum unit as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.



Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
Align the holes in a straight line
Mesh the teeth.
❼ Drive Gear (right) Assembly
⓭ Drive Gear (left) Assembly
Fig. B
Grease
Fig. C
❾ Pin
❿ Axle
⓮ Dowel
Fig. D
Grease
Fig. E
Oil
Fig. F
❹ Screws
❺ Reinforcing Plate TT
2
1
❶ Screw
❷ Coaster Plate Spring
⓯ Hole
❻ Stopper Washer 1.5
ⓐ
❼ Drive Gear (right) Assembly
⓫ Slot
Ⓐ
ⓑ
❽ Axle
⓬ Brake Release Arm
❸ Coaster (right) Assembly

Fig. 3-19.

3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

1. Removal (See Fig. 3-20.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the drum assembly as described in section 3-13.
3) Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
5) Remove the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
6) Remove the screw ❶, then remove the coaster plate spring ❷ and the coaster (left) assembly ❸.
7) Remove the two screws ❹, then remove the reinforcing plate SS assembly ❺.
8) Remove the stopper washer 1.5 ❻, then remove the drive gear (left) assembly ❼.

2. Installation (See Fig. 3-20.)

1) Grease the points of the mechanism chassis shown in Fig A.
2) Apply half a drop of oil to the axle ❽ (See Fig. E).
3) Grease pin ❾, axle ❿ and dowel ⓰ of the coaster (left) assembly ❸ (See Fig. B).
4) Mount by aligning the pin ❾ and the axle ❿ with the slot ⓫ of the mechanism chassis.
5) Fit the drive gear (left) assembly ❼ to the axle ❽, and mount so that the gear engages with the wheel gear ⓭ and the UL gear ⓮.
6) Align the ⓐ part with the slot ⓫, and the hole ⓮ with the pin ❾ of the coaster (left) assembly ❸.
7) Install the stopper washer 1.5 ❻.
8) Mount by aligning the coaster plate spring ❷ with the axle ❿ and pin ❾ of the coaster (left) assembly ❸, then secure with the screw ❶.
9) Mount the reinforcing plate SS assembly ❺ aligning it with the dowel ⓯, then tighten the two screws ❹ in the indicated order.
10) Grease points indicated in Figs. C and D.
11) Mount the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
14) Mount the drum assembly as described in section 3-13.
15) Mount the DC motor (capstan motor) as described in section 3-3.

Note:
- Screw ❶ should be tightened with a tightening torque of approx. 500g•cm. If tightened too much, the coaster (right) assembly ❸ and the coaster plate spring ❷ will be deformed.
- After installing, be sure to perform tape path adjustment as described in section 4.

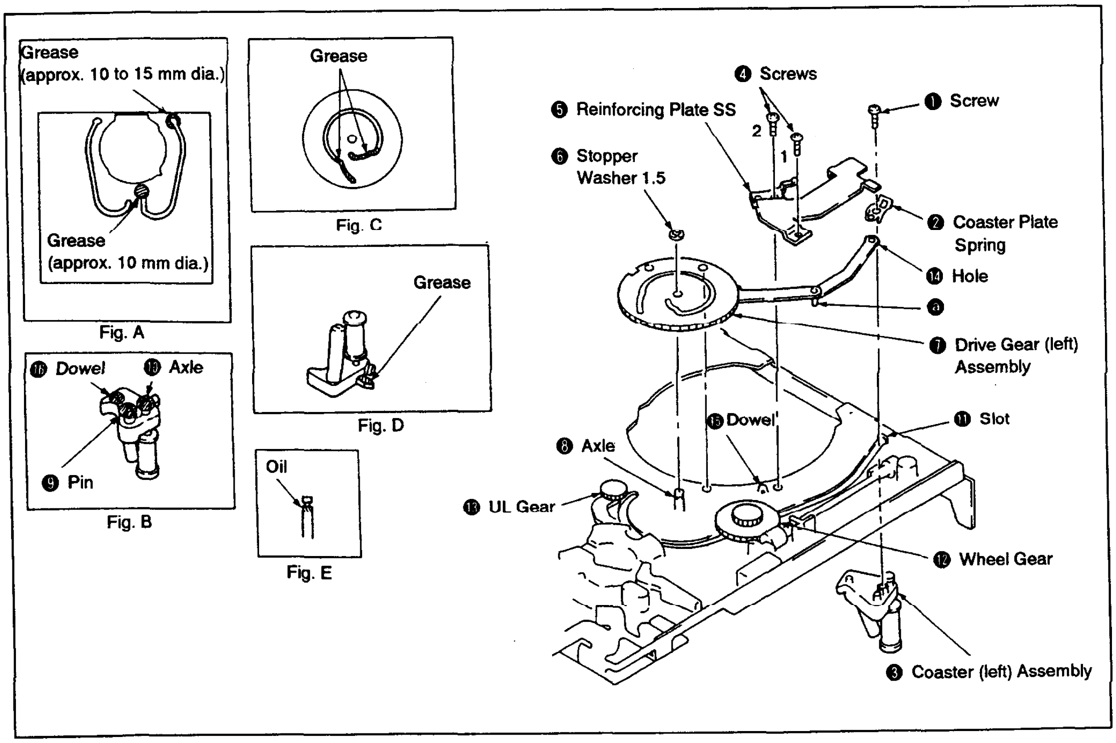

Grease
(approx. 10 to 15 mm dia.)
Grease
(approx. 10 mm dia.)
Fig. A
⓰ Dowel
❿ Axle
❾ Pin
Fig. B
Grease
Fig. C
Grease
Fig. D
Oil
Fig. E
❹ Screws
❺ Reinforcing Plate SS
2
1
❶ Screw
❻ Stopper Washer 1.5
❷ Coaster Plate Spring
⓮ Hole
ⓐ
❼ Drive Gear (left) Assembly
⓯ Dowel
❽ Axle
⓫ Slot
⓭ UL Gear
⓬ Wheel Gear
❸ Coaster (left) Assembly

Fig. 3-20.

3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

1. Removal (See Fig. 3-21.)

1) Remove the DC motor (capstan motor) as described in section 3-3.
2) Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
4) Remove the drive gear (right) assembly as described in section 3-18.
5) Remove the drive gear (left) assembly as described in section 3-19.
6) Remove the two screws ❶, then remove the loading motor assembly ❷.
7) Remove the brake release arm ❸.
8) Remove the stopper washer ❹, then remove the wheel gear ❺.
9) Remove the worm assembly ❻ from the six claws ❼.

2. Installation (See Fig. 3-21.)

1) Mount the worm assembly ❻, matching it to the six claws ❼.
2) Grease the shaded parts of the worm assembly ❻ (five places) (see Fig A).
3) Apply half a drop of oil to the axle ❽ (See Fig. B).
4) Fit the wheel gear ❺ to the axle ❽ and engage it with the gear of the worm assembly ❻.
5) Mount the brake release arm ❸.
6) Grease the whole perimeter of the gear of the loading motor assembly ❷.
7) Align the loading motor assembly ❷ with the mechanism chassis and secure it with the two screws ❶.
8) Mount the drive gear (left) assembly as described in section 3-19.
9) Mount the drive gear (right) assembly as described in section 3-18.
10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
12) Mount the DC motor (capstan motor) as described in section 3-3.

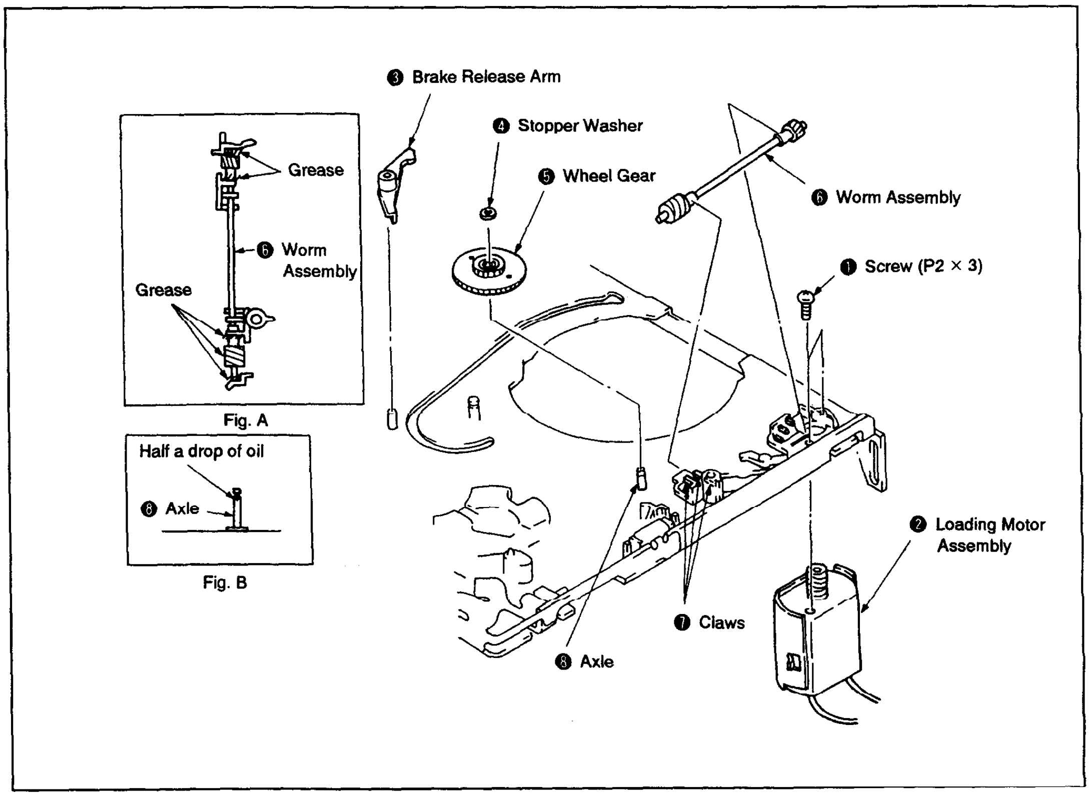

❸ Brake Release Arm
❹ Stopper Washer
❺ Wheel Gear
❻ Worm Assembly
❶ Screw (P2 × 3)
❷ Loading Motor Assembly
❼ Claws
❽ Axle
Grease
❻ Worm Assembly
Grease
Fig. A
Half a drop of oil
❽ Axle
Fig. B

Fig. 3-21.

3-21. ROTARY UPPER DRUM REPLACEMENT

1. Removal

- If possible, make a recording before removal.

1) Detach the six solderings ❾, then use a pair of tweezers or the like to confirm that the terminals passing through the board holes from below can move freely.
2) Remove the two screws ❶ (See Fig. 3-22).
3) Mount the jig ❹ (Ref. No. J-7) with the two supplied screws ❷, then screw the attached hexagon socket screws ❸ to the jig ❹. The rotary upper drum ❺ will move upward and come off (See Fig. 3-23).

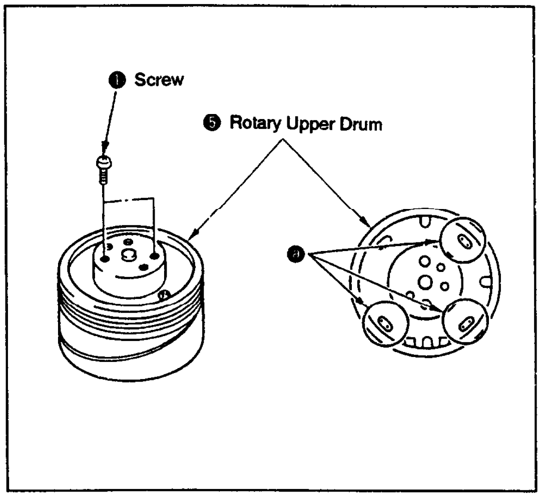


Fig. 3-22.

2. Installation

1) Wipe clean the flange surface and the rotary upper drum ❺ surface that makes contact with it, and confirm that they are free from dirt and scratches.
2) Insert the jig ❼ (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ❺ by passing the jig through its positioning hole ❻.
   Note: Confirm that the terminals ❽ protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
3) Remove the jig ❼ and push down the rotary upper drum ❺ gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws ❶ alternately.
4) Insert the jig ❼ into the positioning hole ❻ again and confirm that it goes in smoothly. If it does not, loosen the two screws ❶, repeat step 3 of the Removal paragraph and restart the setting procedure.
5) Tighten the screws ❶.
6) Solder the terminals ❽ (❾ in Fig. 3-22).
   Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

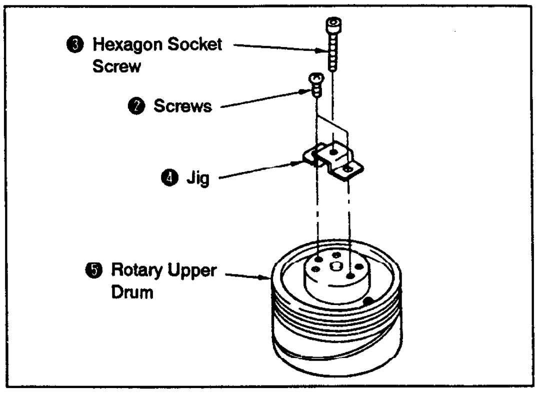


Fig. 3-23.

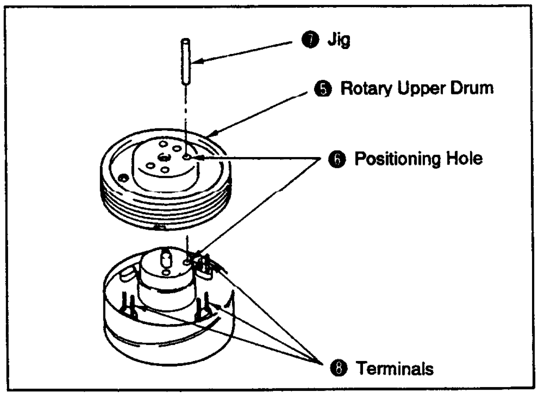


Fig. 3-24.

3-22. FWD BACK TENSION (See Fig. 3-25.)

1) Set the torque cassette (Ref. No. J-6).
2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g•cm.
3) If the torque value does not meet the specification, adjust the adjust arm ❶.

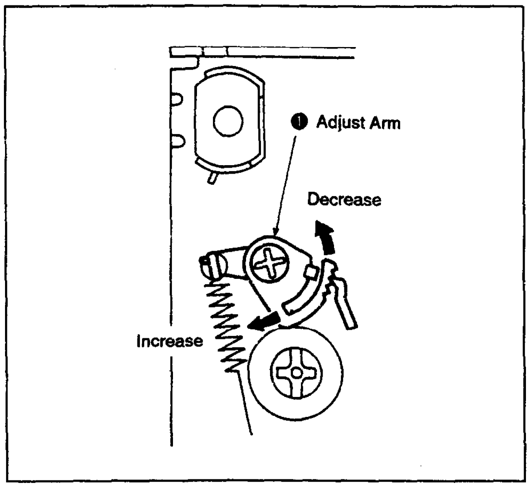


Fig. 3-25.

3-23. REEL TORQUE CHECK

1) Set the torque cassette.
2) Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g•cm.
3) Set the REV mode and confirm that S reel table torque value is within 29 ± 6 g•cm.
4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g•cm.
5) If a torque value does not meet the specifications above, replace the corresponding reel table.

4. TAPE PATH ADJUSTMENT

[The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

4-1. TRACK SHIFT MODE SETTING

[Setting Procedure]

- Connect the TEST A and TEST B terminals to the COM terminal.
  Example:
  NTSC ········ GV-8
  PAL ·········· GV-8E
  Connect Pins ① and pin ③ of CN017 on the
  { SV-34 board (GV-8) / SV-35 board (GV-8E) } to pin ② of it. (See Fig. 4-1)

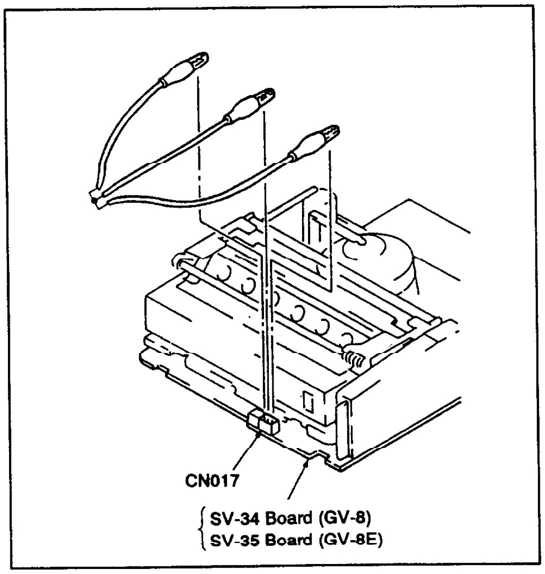
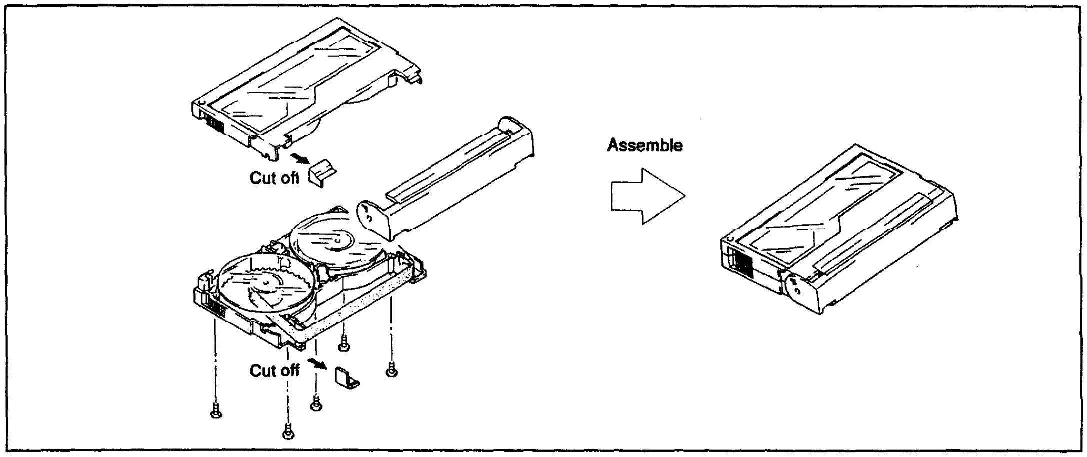


Fig. 4-1.

[Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2).
Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.


Cut off
Cut off
Assemble

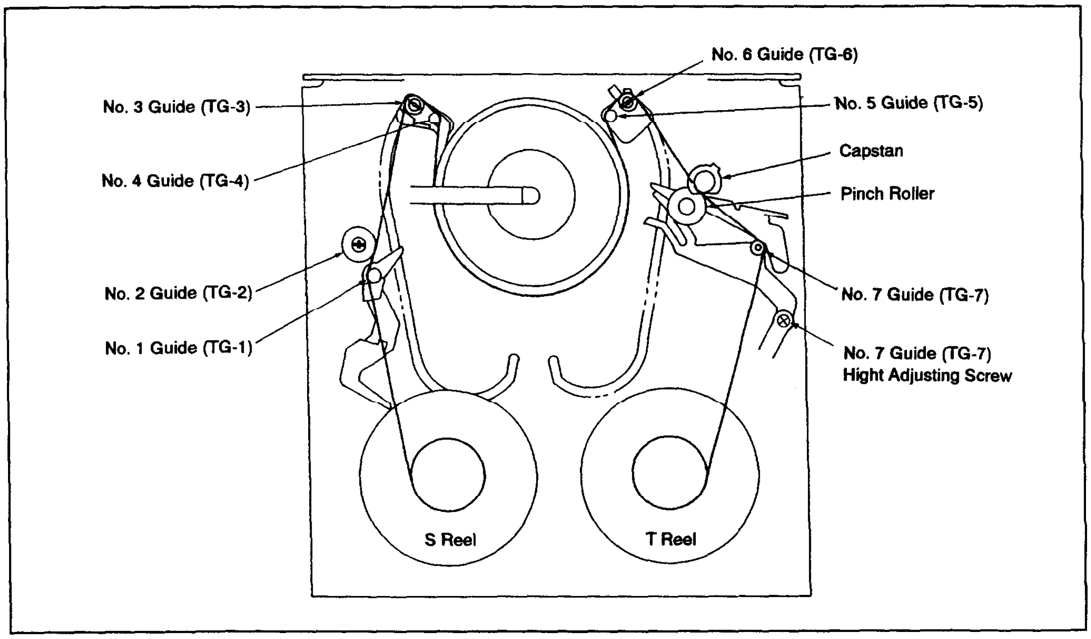

No. 6 Guide (TG-6)
No. 3 Guide (TG-3)
No. 5 Guide (TG-5)
Capstan
No. 4 Guide (TG-4)
Pinch Roller
No. 2 Guide (TG-2)
No. 7 Guide (TG-7)
No. 1 Guide (TG-1)
No. 7 Guide (TG-7)
Hight Adjusting Screw
S Reel
T Reel

Fig. 4-2.

4-2. PREPARATIONS FOR ADJUSTMENT

1) Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
2) Connection of oscilloscope and output method of waveform.
   CH 1: RF signal output of the drum head (V RF OUT)
   Method for signal output:
   Short-circuit the external trigger output (RF SW. P) and GND.

   Example:
   NTSC ····· GV-8
   PAL ······· GV-8E
   CH 1: Pin ③ (V RF OUT) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
   Method for signal output:
   Short-circuit pin ① (GND) and pin ② (RF SW.P) of CN018 on the
   { SV-34 board (GV-8)
   { SV-35 board (GV-8E)
3) Play back the alignment tape for tracking adjustment (Ref. No. J-5).
4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.

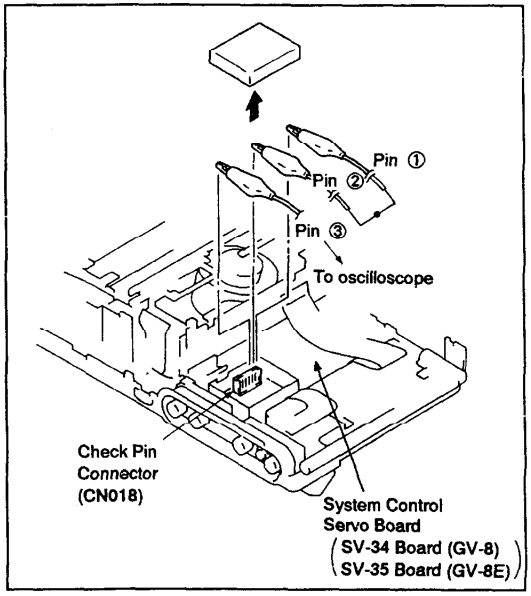

Pin ①
Pin ②
Pin ③
To oscilloscope
Check Pin Connector (CN018)
System Control Servo Board
(SV-34 Board (GV-8)
SV-35 Board (GV-8E))

Fig. 4-3.

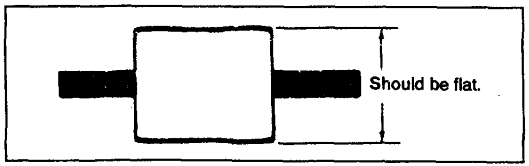

Should be flat.

Fig. 4-4.

4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

1) Play back the alignment tape for tracking adjustment.
2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ❶, loosen the lockscrew ❷ a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ❸.
3) Pass a hexagonal wrench, screwdriver or the like through the hole ❹, loosen the lockscrew ❺ a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) ❻.

Note: Take care not to loosen lockscrews too much, since guides come loose easily.

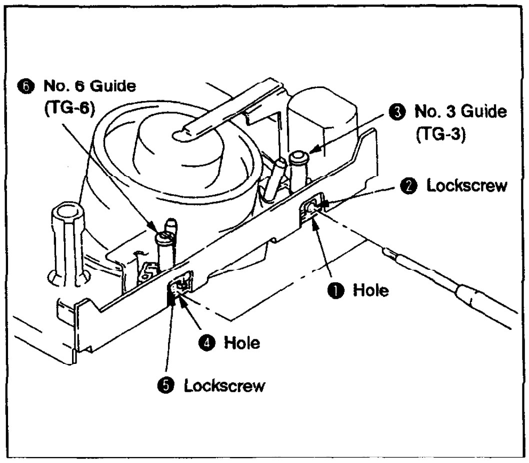

❻ No. 6 Guide (TG-6)
❸ No. 3 Guide (TG-3)
❷ Lockscrew
❶ Hole
❹ Hole
❺ Lockscrew

Fig. 4-5.

4-4. TRACKING FINE ADJUSTMENT (See Figs. 4-5. and 4-6.)

1) Play back the alignment tape for tracking adjustment and set the track shift mode.
2) Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
3) Fix the No. 3 guide ❸ by tightening its lockscrew ❷. Then confirm that the entrance side waveform has not changed.
4) Fix the No. 6 guide ❻ by tightening its lockscrew ❺. Then confirm that the exit side waveform has not changed.

Note: The set screws ❷ and ❺ should be tightened with a tightening torgue of approx. 200g•cm ± 10%.
If tightened too much, there is danger of damaging the thread.

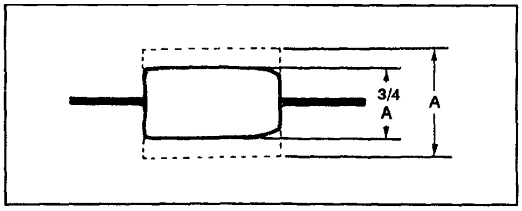


Fig. 4-6.

4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

4-5-1. No. 2 Guide (TG-2) Height Presetting (See Fig. 4-7.)

1) Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange ❶ upper surface to 18.6 mm by rotating the TG-2 upper flange ❶.

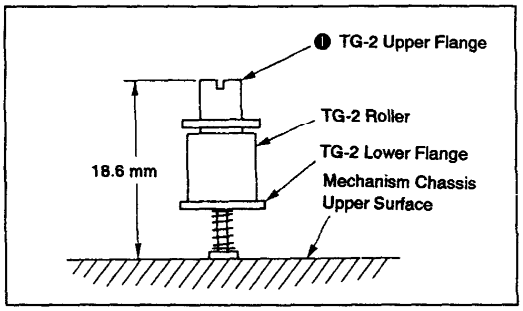


Fig. 4-7.

[Reference]
This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7) . To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw
TG-2, 3, 6	Raise	Counterclockwise
	Lower	Clockwise
TG-7	Raise	Counterclockwise
	Lower	Clockwise

4-5-2. No. 2 Guide (TG-2) Adjustment (See Figs. 4-8. and 4-9.)

1) Play back a thin tape like the P6-120MP, etc. and set the REV mode.
2) Confirm that the tape is not bent at the lower flange ❷ of the No. 2 guide (TG-2) ❶ (See Fig. 4-8). If it is, turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ clockwise with a screwdriver, lowering it until the tape is straightened.
3) Play back the alignment tape for tracking adjustment.
4) Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
6) If the waveform is not normal (See Fig. 4-9), turn the upper flange ❸ of the No. 2 guide (TG-2) ❶ 90° counter-clockwise and repeat step 5.
   Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

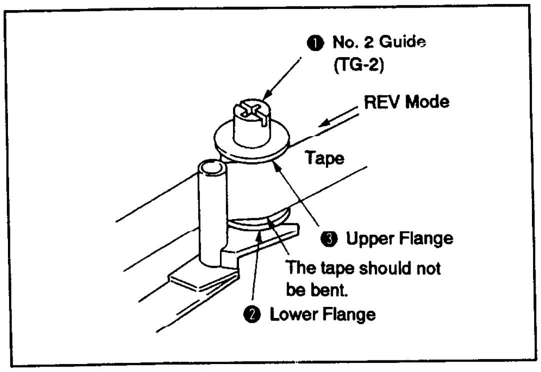

❶ No. 2 Guide (TG-2)
REV Mode
Tape
❸ Upper Flange
The tape should not be bent.
❷ Lower Flange

Fig. 4-8.

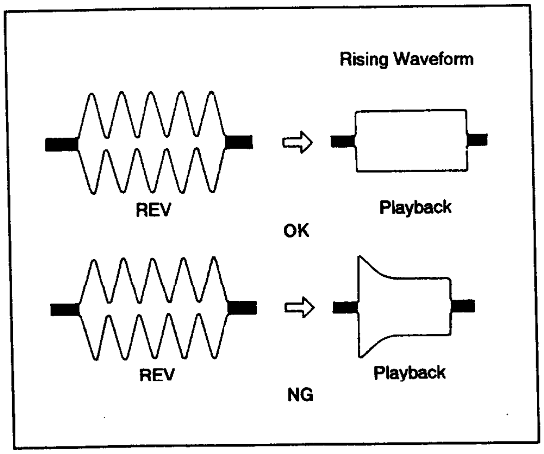

Rising Waveform
REV
OK
Playback
REV
NG
Playback

Fig. 4-9.

4-6. No. 7 GUIDE (TG-7) ADJUSTMENT (See Fig. 4-10.)

1) Play back the alignment tape for tracking adjustment and set the REV mode.
2) Confirm that the tape is not bent between the No. 6 guide (TG-6) ❶ and the capstan ❷. If it is, turn the hight adjusting screw ❹ of the No. 7 guide (TG-7) ❸ until the tape is straightened.
3) Set the playback mode again and confirm that the tape is not bent between the capstan ❷ and the hight adjusting screw ❹ of the No. 7 guide (specification:0.5 mm or less). If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) ❸ until bending is within the specification (0.5 mm).
   If in the REV mode tape bending between the No. 6 guide (TG-6) ❶ and the capstan ❷ is 0.3 mm or less, adjustment can be considered completed.

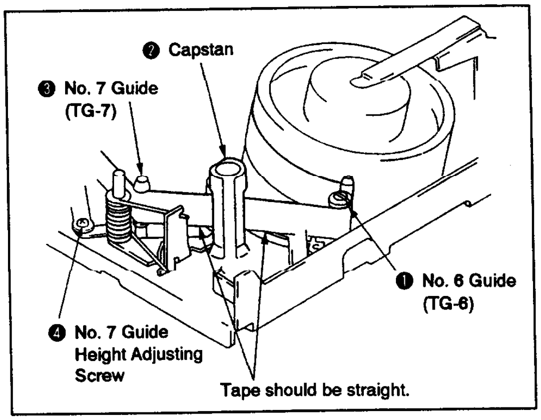

❷ Capstan
❸ No. 7 Guide (TG-7)
❶ No. 6 Guide (TG-6)
❹ No. 7 Guide Height Adjusting Screw
Tape should be straight.

Fig. 4-10.

4-7. CUE AND REV WAVEFORM CHECK (See Fig. 4-11.)

1) Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
2) Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

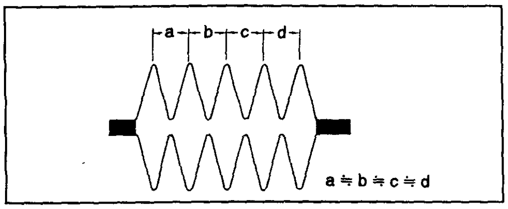


Fig. 4-11.

4-8. CHECK AFTER ADJUSTMENT

4-8-1. Tracking Check

1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
2) Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
3) Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

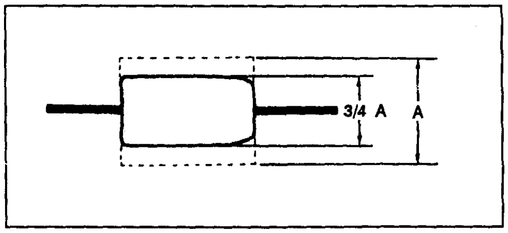
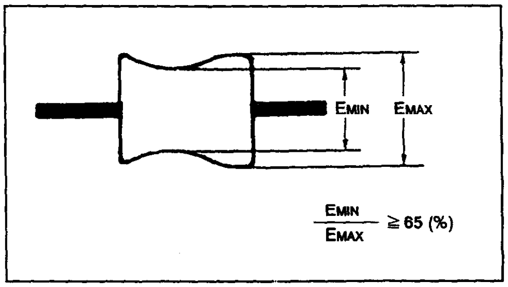
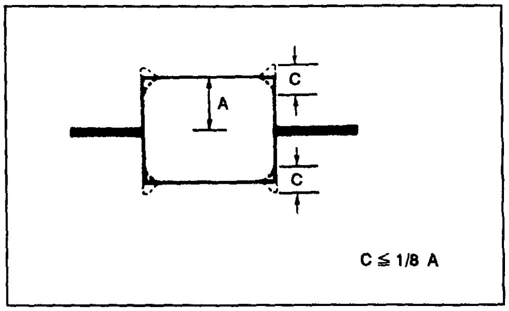


Fig. 4-12.



$$\frac{E_{MIN}}{E_{MAX}} \geqq 65\ (\%)$$

Fig. 4-13.



$C \leqq 1/8\ A$

Fig. 4-14.

4-8-2. Rising Check (See Fig. 4-15.)

1) Play back the alignment tape for tracking adjustment.
2) Cancel the track shift mode.
3) Eject the tape, then load it again.
4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
6) Repeat steps 3) to 5) once more.

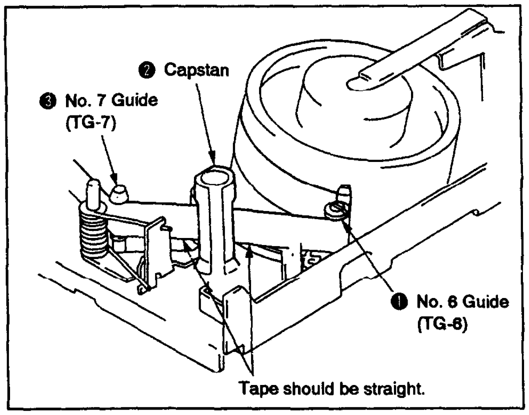

❷ Capstan
❸ No. 7 Guide (TG-7)
❶ No. 6 Guide (TG-6)
Tape should be straight.

Fig. 4-15.

4-8-3. Tape Path Check (See Fig. 4-16.)

1) Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

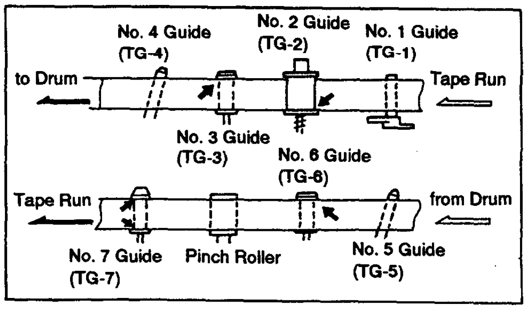
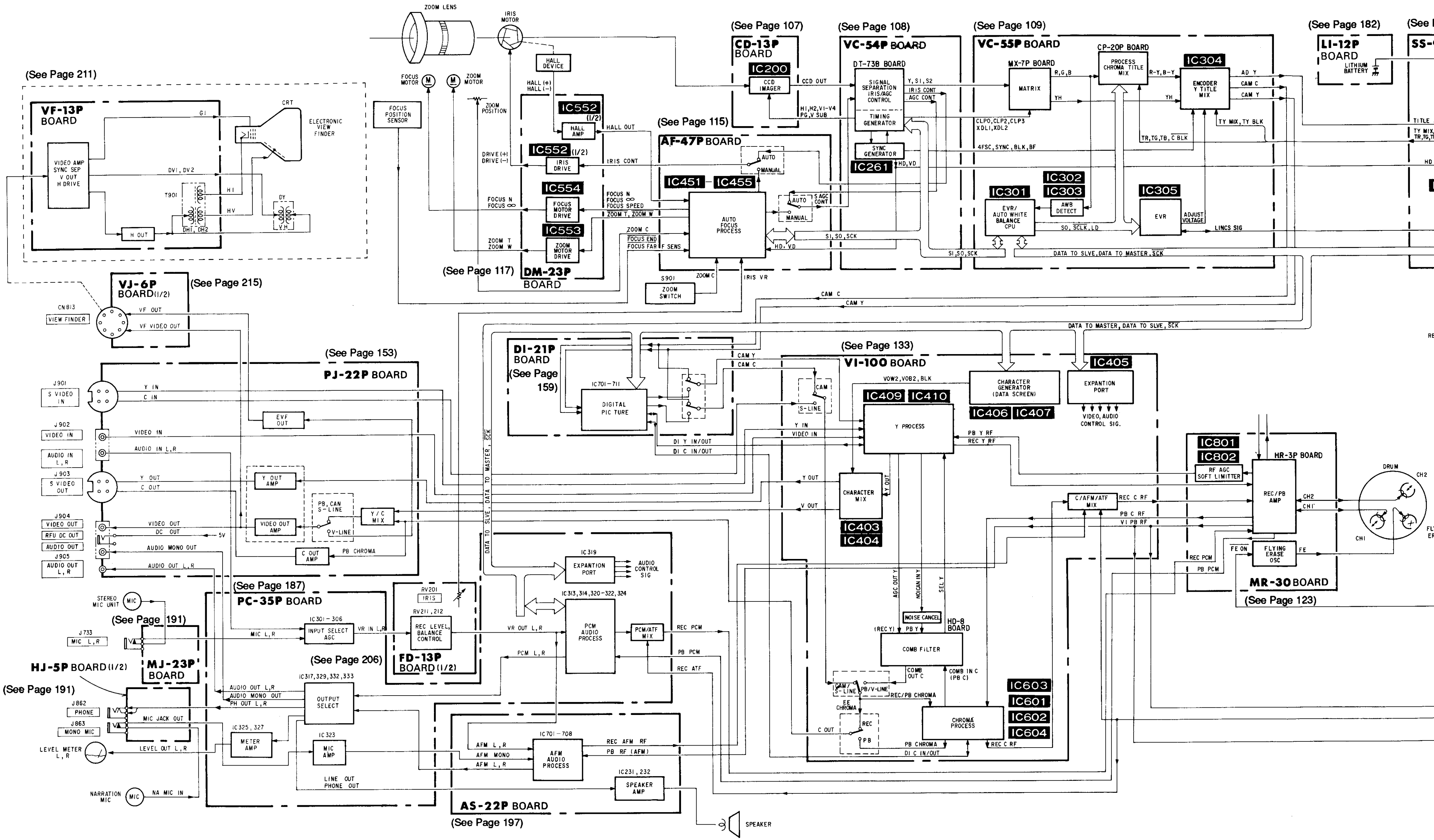
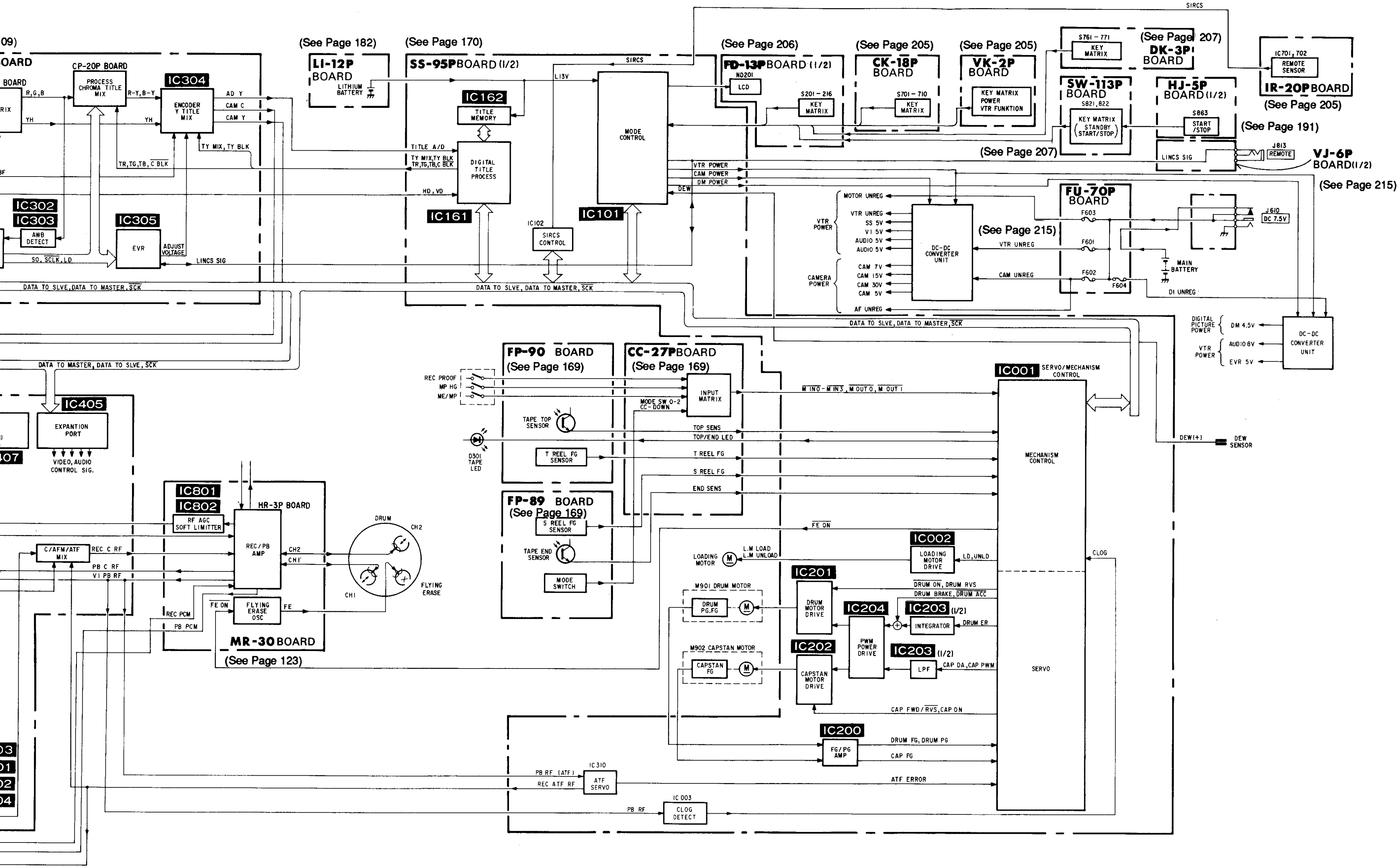

No. 4 Guide (TG-4)
No. 2 Guide (TG-2)
No. 1 Guide (TG-1)
to Drum
Tape Run
No. 3 Guide (TG-3)
No. 6 Guide (TG-6)
Tape Run
from Drum
No. 7 Guide (TG-7)
Pinch Roller
No. 5 Guide (TG-5)

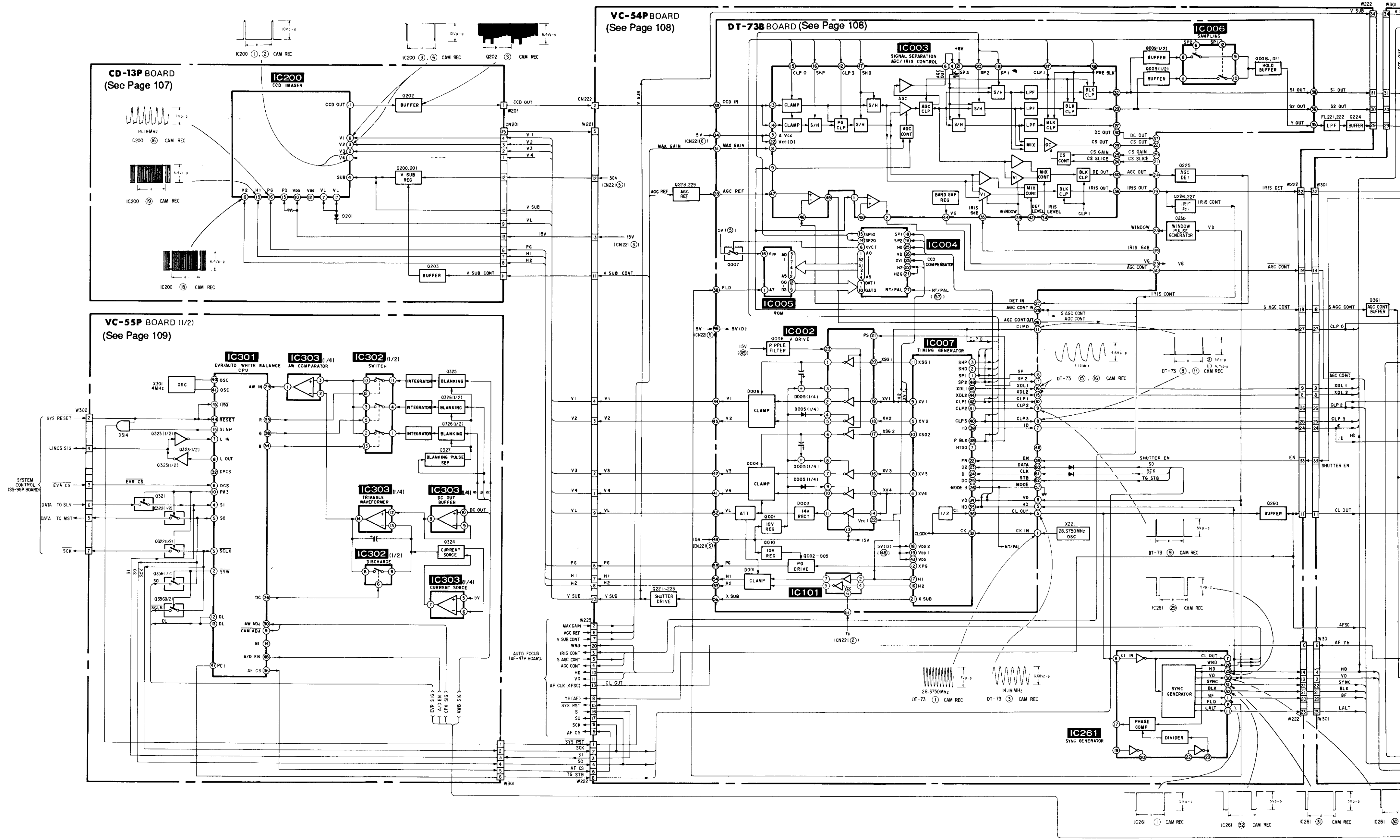
Fig. 4-16.

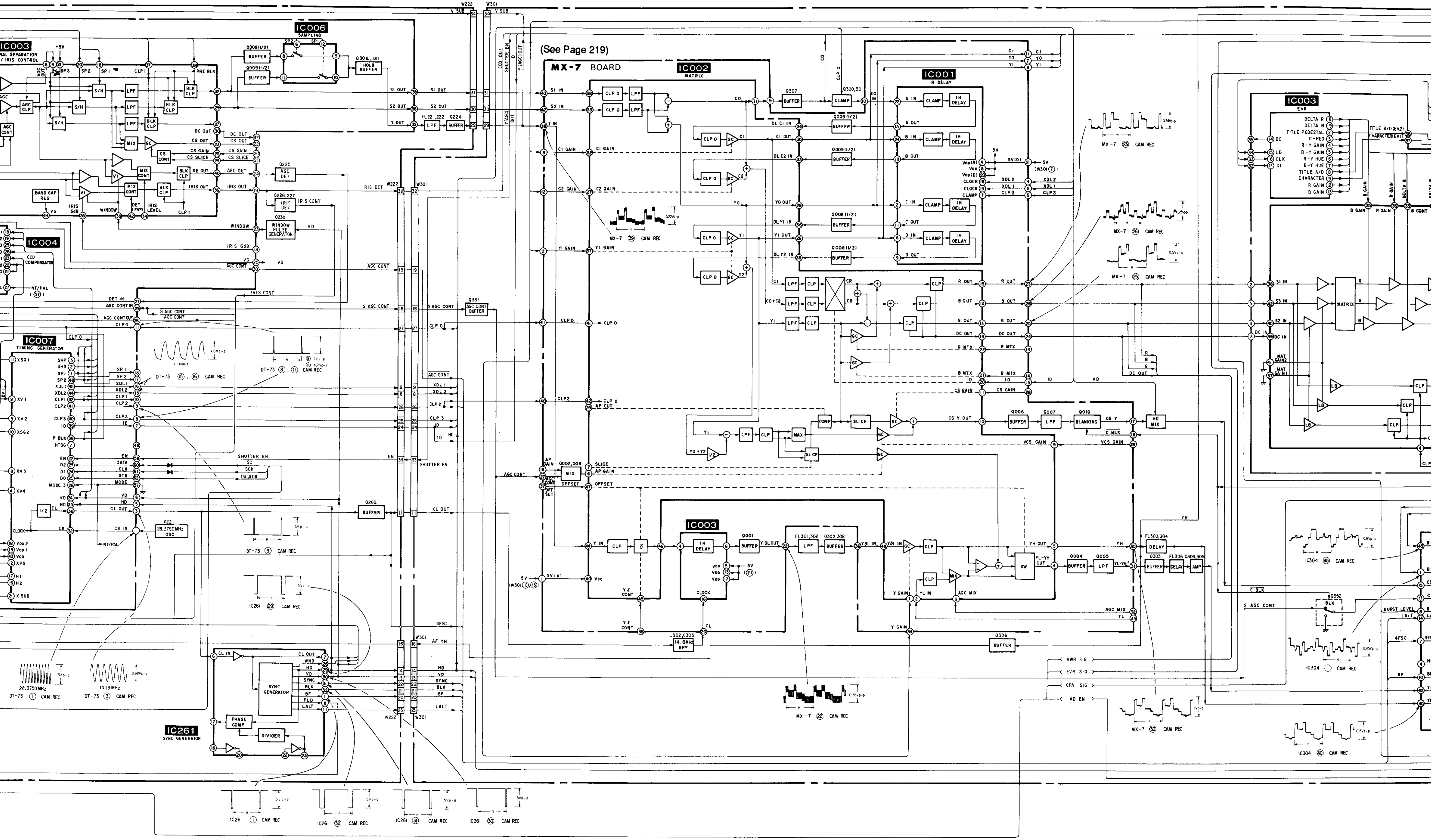
3-2. OVERALL BLOCK DIAGRAM


ZOOM LENS
IRIS MOTOR
HALL DEVICE
FOCUS MOTOR
ZOOM MOTOR
FOCUS POSITION SENSOR
ZOOM POSITION
(See Page 107)
CD-13P BOARD
IC200
CCD IMAGER
CCD OUT
H1,H2,V1-V4 PG,V SUB
(See Page 108)
VC-54P BOARD
DT-73B BOARD
SIGNAL SEPARATION IRIS/AGC CONTROL
TIMING GENERATOR
SYNC GENERATOR
IC261
Y,S1,S2
IRIS CONT
AGC CONT
HD,VD
(See Page 109)
VC-55P BOARD
MX-7P BOARD
MATRIX
R,G,B
YH
CP-20P BOARD
PROCESS CHROMA TITLE MIX
R-Y,B-Y
IC304
ENCODER Y TITLE MIX
AD Y
CAM C
CAM Y
TY MIX,TY BLK
TR,TG,TB,C BLK
CLP0,CLP2,CLP3 XDL1,XDL2
4FSC,SYNC,BLK,BF
IC301
EVR/ AUTO WHITE BALANCE CPU
IC302
IC303
AWB DETECT
IC305
EVR
ADJUST VOLTAGE
LINCS SIG
SO,SCLK,LD
SI,SO,SCK
DATA TO SLVE,DATA TO MASTER,SCK
(See Page 182)
LI-12P BOARD
LITHIUM BATTERY
(See
SS-
TITLE
TY MIX,
TR,TG,T
HD
(See Page 211)
VF-13P BOARD
VIDEO AMP SYNC SEP V OUT H DRIVE
CRT
ELECTRONIC VIEW FINDER
G1
DV1,DV2
T901
H1
HV
DY
V.H
H OUT
DH1,DH2
(See Page 115)
AF-47P BOARD
AUTO
MANUAL
IC451
IC455
AUTO FOCUS PROCESS
AGC CONT
HALL OUT
IRIS CONT
FOCUS N
FOCUS ∞
FOCUS SPEED
ZOOM T, ZOOM W
ZOOM C
FOCUS END
FOCUS FAR
F SENS
HD,VD
S901
ZOOM SWITCH
ZOOM C
IRIS VR
IC552 (1/2)
HALL AMP
IC552 (1/2)
IRIS DRIVE
DRIVE (+)
DRIVE (−)
HALL (+)
HALL (−)
IC554
FOCUS MOTOR DRIVE
FOCUS N
FOCUS ∞
IC553
ZOOM MOTOR DRIVE
ZOOM T
ZOOM W
(See Page 117)
DM-23P BOARD
VJ-6P BOARD (1/2)
(See Page 215)
CN813
VIEW FINDER
VF OUT
VF VIDEO OUT
CAM C
CAM Y
DATA TO MASTER, DATA TO SLVE, SCK
(See Page 153)
PJ-22P BOARD
J901
S VIDEO IN
Y IN
C IN
J902
VIDEO IN
AUDIO IN L,R
J903
S VIDEO OUT
Y OUT
C OUT
J904
VIDEO OUT
RFU DC OUT
AUDIO OUT
J905
AUDIO OUT L,R
DC OUT
5V
AUDIO MONO OUT
EVF OUT
Y OUT AMP
VIDEO OUT AMP
PB, CAN S-LINE
V-LINE
Y/C MIX
C OUT AMP
PB CHROMA
DI-21P BOARD
(See Page 159)
IC701-711
DIGITAL PIC TURE
CAM Y
CAM C
DI Y IN/OUT
DI C IN/OUT
DATA TO SLVE, DATA TO MASTER, SCK
(See Page 133)
VI-100 BOARD
CAM
S-LINE
VOW2,VOB2,BLK
IC409
IC410
Y PROCESS
Y IN
VIDEO IN
PB Y RF
REC Y RF
CHARACTER GENERATOR (DATA SCREEN)
IC406
IC407
IC405
EXPANTION PORT
VIDEO,AUDIO CONTROL SIG.
Y OUT
V OUT
CHARACTER MIX
Y OUT
IC403
IC404
AGC OUT Y
NOICAN IN Y
SEL Y
NOISE CANCEL
HD-8 BOARD
(REC Y)
PB Y
COMB FILTER
COMB OUT C
COMB IN C (PB C)
CAM/ S-LINE
PB/V-LINE
REC/PB CHROMA
EE CHROMA
REC
PB
C OUT
CHROMA PROCESS
PB CHROMA
DI C IN/OUT
REC C RF
IC603
IC601
IC602
IC604
C/AFM/ATF MIX
REC C RF
PB C RF
V1 PB RF
IC801
IC802
RF AGC SOFT LIMITTER
HR-3P BOARD
REC/PB AMP
CH2
CH1
DRUM
CH2
CH1
FE ON
FLYING ERASE OSC
FE
REC PCM
PB PCM
MR-30 BOARD
(See Page 123)
IC319
EXPANTION PORT
AUDIO CONTROL SIG
IC313,314,320-322,324
PCM AUDIO PROCESS
PCM/ATF MIX
REC PCM
PB PCM
REC ATF
PCM L,R
VR OUT L,R
RV201
IRIS
RV211,212
REC LEVEL, BALANCE CONTROL
FD-13P BOARD (1/2)
(See Page 187)
PC-35P BOARD
IC301-306
INPUT SELECT AGC
VR IN L,R
MIC L,R
STEREO MIC UNIT
MIC
(See Page 191)
J733
MIC L,R
MJ-23P BOARD
HJ-5P BOARD (1/2)
(See Page 191)
J862
PHONE
J863
MONO MIC
MIC JACK OUT
(See Page 206)
IC317,329,332,333
OUTPUT SELECT
AUDIO OUT L,R
AUDIO MONO OUT
PH OUT L,R
IC325,327
METER AMP
LEVEL METER L,R
LEVEL OUT L,R
IC323
MIC AMP
LINE OUT
PHONE OUT
NARRATION MIC
NA MIC IN
IC701-708
AFM AUDIO PROCESS
AFM L,R
AFM MONO
AFM L,R
REC AFM RF
PB RF (AFM)
IC231,232
SPEAKER AMP
SPEAKER
AS-22P BOARD
(See Page 197)

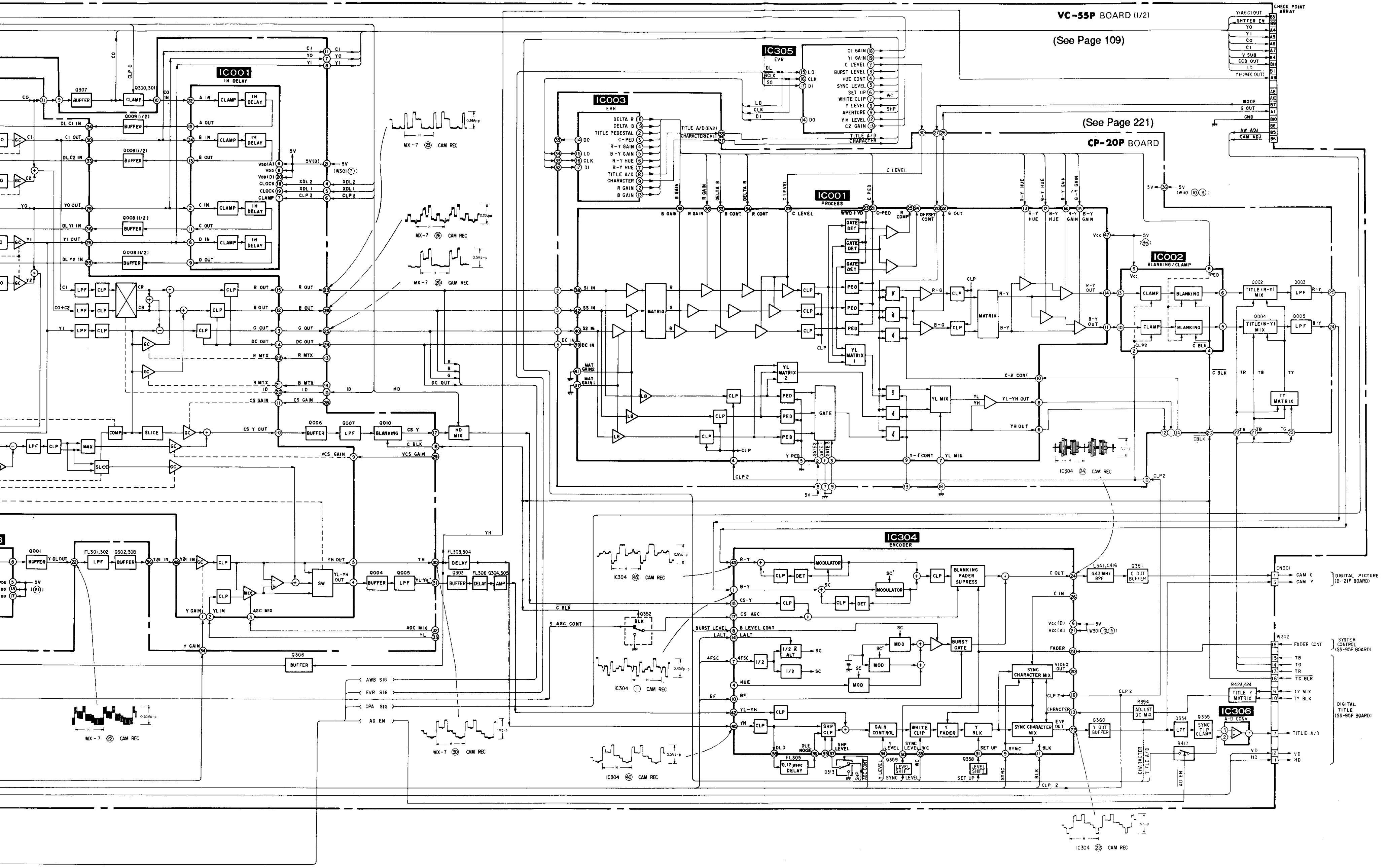

(See Page 182)
LI-12P BOARD
LITHIUM BATTERY
(See Page 170)
SS-95P BOARD (1/2)
IC162
TITLE MEMORY
DIGITAL TITLE PROCESS
IC161
IC102
SIRCS CONTROL
MODE CONTROL
IC101
SIRCS
LI3V
TITLE A/D
TY MIX,TY BLK
TR,TG,TB,C BLK
HD, VD
VTR POWER
CAM POWER
DM POWER
DEW
DATA TO SLVE, DATA TO MASTER, SCK
CP-20P BOARD
PROCESS CHROMA TITLE MIX
R,G,B
R-Y,B-Y
YH
IC304
ENCODER Y TITLE MIX
AD Y
CAM C
CAM Y
TY MIX, TY BLK
TR,TG,TB,C BLK
IC302
IC303
AWB DETECT
IC305
EVR
ADJUST VOLTAGE
LINCS SIG
SO, SCLK, LD
DATA TO SLVE, DATA TO MASTER, SCK
DATA TO MASTER, DATA TO SLVE, SCK
IC405
EXPANTION PORT
VIDEO, AUDIO CONTROL SIG.
(See Page 206)
FD-13P BOARD (1/2)
ND201
LCD
S201 – 216
KEY MATRIX
(See Page 205)
CK-18P BOARD
S701 – 710
KEY MATRIX
(See Page 205)
VK-2P BOARD
KEY MATRIX POWER VTR FUNKTION
S761 – 771
KEY MATRIX
(See Page 207)
DK-3P BOARD
SW-113P BOARD
S821, 822
KEY MATRIX (STANDBY START/STOP)
(See Page 207)
HJ-5P BOARD (1/2)
S863
START /STOP
LINCS SIG
(See Page 191)
J813
REMOTE
VJ-6P BOARD(1/2)
(See Page 215)
IC701, 702
REMOTE SENSOR
IR-20P BOARD
(See Page 205)
MOTOR UNREG
VTR UNREG
SS 5V
VI 5V
AUDIO 5V
AUDIO 5V
VTR POWER
CAM 7V
CAM 15V
CAM 30V
CAM 5V
CAMERA POWER
AF UNREG
DC-DC CONVERTER UNIT
(See Page 215)
VTR UNREG
CAM UNREG
FU-70P BOARD
F603
F601
F602
F604
J610
DC 7.5V
MAIN BATTERY
DI UNREG
DATA TO SLVE, DATA TO MASTER, SCK
DIGITAL PICTURE POWER
DM 4.5V
AUDIO 8V
VTR POWER
EVR 5V
DC-DC CONVERTER UNIT
IC001
SERVO/MECHANISM CONTROL
MECHANISM CONTROL
SERVO
FP-90 BOARD
(See Page 169)
REC PROOF
MP HG
ME/MP
TAPE TOP SENSOR
T REEL FG SENSOR
D301 TAPE LED
CC-27P BOARD
(See Page 169)
INPUT MATRIX
MODE SW 0-2
CC-DOWN
M INO-M IN3, M OUT0, M OUT1
TOP SENS
TOP/END LED
T REEL FG
S REEL FG
END SENS
FP-89 BOARD
(See Page 169)
S REEL FG SENSOR
TAPE END SENSOR
MODE SWITCH
DEW(+)
DEW SENSOR
FE ON
CLOG
LOADING MOTOR
L.M LOAD
L.M UNLOAD
IC002
LOADING MOTOR DRIVE
LD, UNLD
M901 DRUM MOTOR
DRUM PG.FG
IC201
DRUM MOTOR DRIVE
DRUM ON, DRUM RVS
DRUM BRAKE, DRUM ACC
IC204
PWM POWER DRIVE
IC203 (1/2)
INTEGRATOR
DRUM ER
M902 CAPSTAN MOTOR
CAPSTAN FG
IC202
CAPSTAN MOTOR DRIVE
IC203 (1/2)
LPF
CAP DA, CAP PWM
CAP FWD/RVS, CAP ON
IC200
FG/PG AMP
DRUM FG, DRUM PG
CAP FG
IC310
ATF SERVO
PB RF (ATF)
REC ATF RF
ATF ERROR
IC003
CLOG DETECT
PB RF
IC801
IC802
RF AGC SOFT LIMITTER
HR-3P BOARD
REC/PB AMP
CH2
CH1
DRUM
FLYING ERASE
C/AFM/ATF MIX
REC C RF
PB C RF
VI PB RF
REC PCM
PB PCM
FE ON
FLYING ERASE OSC
FE
MR-30 BOARD
(See Page 123)

3-3. CAMERA BLOCK DIAGRAM


CD-13P BOARD
(See Page 107)
IC200
CCD IMAGER
CCD OUT
BUFFER
Q202
V SUB REG
Q200,201
Q203
BUFFER
V SUB CONT
D201
IC200 ①, ② CAM REC
IC200 ③, ⑥ CAM REC
Q202 ⑤ CAM REC
14.19MHz
IC200 ⑯ CAM REC
IC200 ⑲ CAM REC
IC200 ⑱ CAM REC
VC-54P BOARD
(See Page 108)
DT-73B BOARD (See Page 108)
IC003
SIGNAL SEPARATION AGC/IRIS CONTROL
IC006
SAMPLING
IC004
CCD COMPENSATOR
IC005
ROM
IC002
V DRIVE
IC007
TIMING GENERATOR
IC101
IC261
SYNC GENERATOR
CLAMP
S/H
PG CLP
AGC
AGC CLP
AGC CONT
LPF
BLK CLP
MIX
MIX CONT
CS CONT
BAND GAP REG
HOLD BUFFER
BUFFER
AGC REF
Q228,229
RIPPLE FILTER
Q006
ATT
10V REG
-14V RECT
PG DRIVE
SHUTTER DRIVE
Q221~223
X221 28.3750MHz OSC
AGC DET
Q225
IRIS DET
Q226,227
WINDOW PULSE GENERATOR
Q230
BUFFER
Q260
S AGC CONT BUFFER
Q361
LPF
FL221,222
Q224
SYNC GENERATOR
PHASE COMP
DIVIDER
S1 OUT
S2 OUT
Y OUT
DC OUT
CS OUT
CS GAIN
CS SLICE
AGC OUT
IRIS OUT
IRIS CONT
IRIS 6dB
WINDOW
VG
AGC CONT
DET IN
CLP 0
XDL 1
XDL 2
CLP 2
CLP 3
ID
SHUTTER EN
CL OUT
AF YH
HD
VD
SYNC
BLK
BF
FLD
LALT
4FSC
DT-73 ⑮, ⑯ CAM REC
DT-73 ⑧, ⑪ CAM REC
DT-73 ⑨ CAM REC
DT-73 ① CAM REC
DT-73 ③ CAM REC
28.3750MHz
14.19 MHz
IC261 ㉙ CAM REC
IC261 ① CAM REC
IC261 ㉜ CAM REC
IC261 ㉛ CAM REC
IC261 ㉚
VC-55P BOARD (1/2)
(See Page 109)
IC301
EVR/AUTO WHITE BALANCE CPU
IC303 (1/4)
AW COMPARATOR
IC302 (1/2)
SWITCH
INTEGRATOR
BLANKING
Q325
Q326(1/2)
BLANKING PULSE SEP
Q327
IC303 (1/4)
TRIANGLE WAVEFORMER
IC303 (1/4)
DC OUT BUFFER
IC302 (1/2)
DISCHARGE
CURRENT SORCE
Q324
IC303 (1/4)
CURRENT SORCE
X301 4MHz
OSC
SYS RESET
LINCS SIG
EVR CS
DATA TO SLV
DATA TO MST
SCK
SYSTEM CONTROL (SS-95P BOARD)
D314
Q323(1/2)
Q321
Q322(1/2)
Q356(1/2)
AUTO FOCUS (AF-47P BOARD)
MAX GAIN
AGC REF
V SUB CONT
WND
IRIS CONT
S AGC CONT
AGC CONT
AF CLK (4FSC)
YH(AF)
SYS RST
SI
SO
AF CS
TG STB
EVR SIG
A/D EN
CPA SIG
AWB SIG
W201
W221
W222
W223
W301
W302
CN201
CN221
CN222

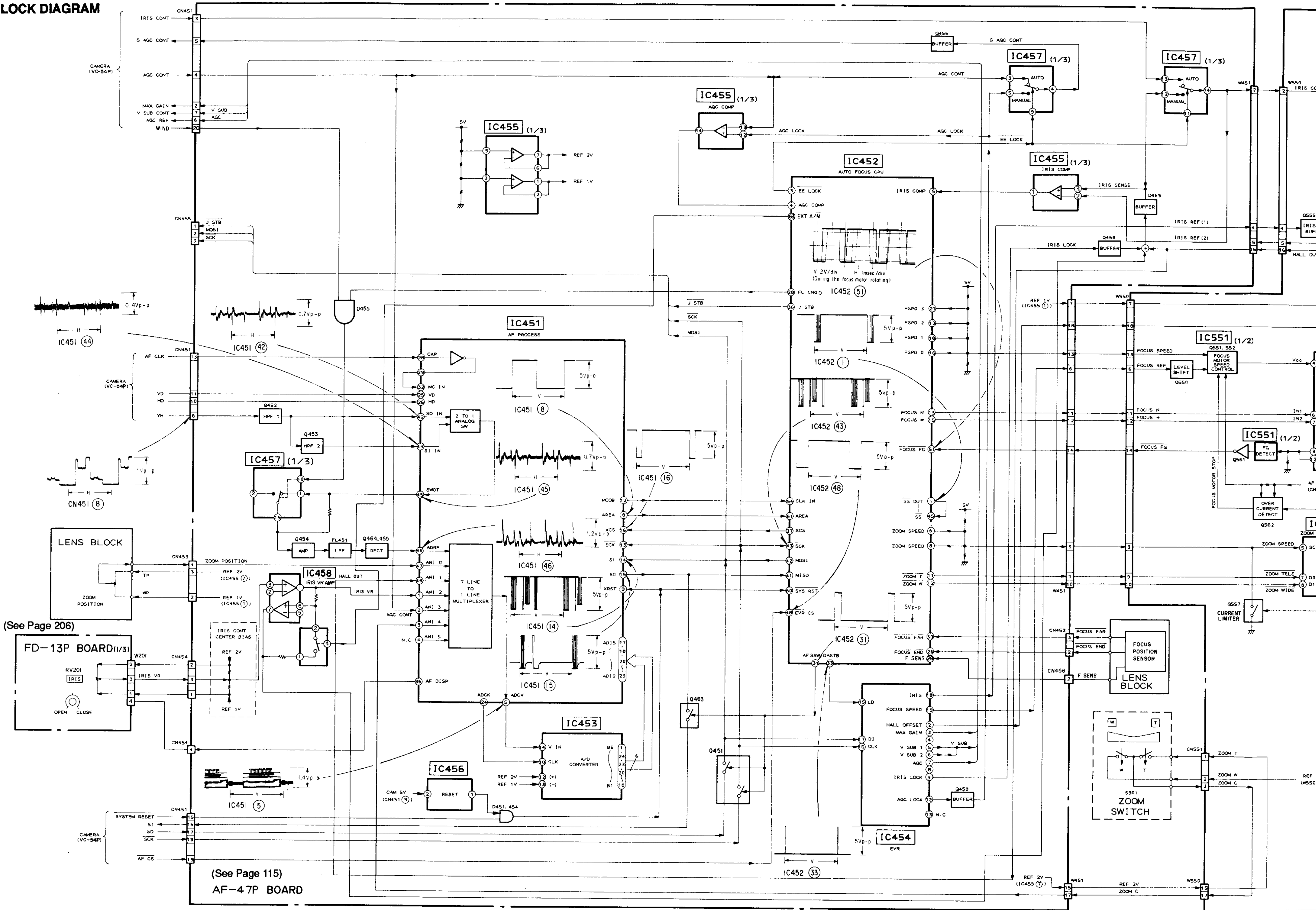


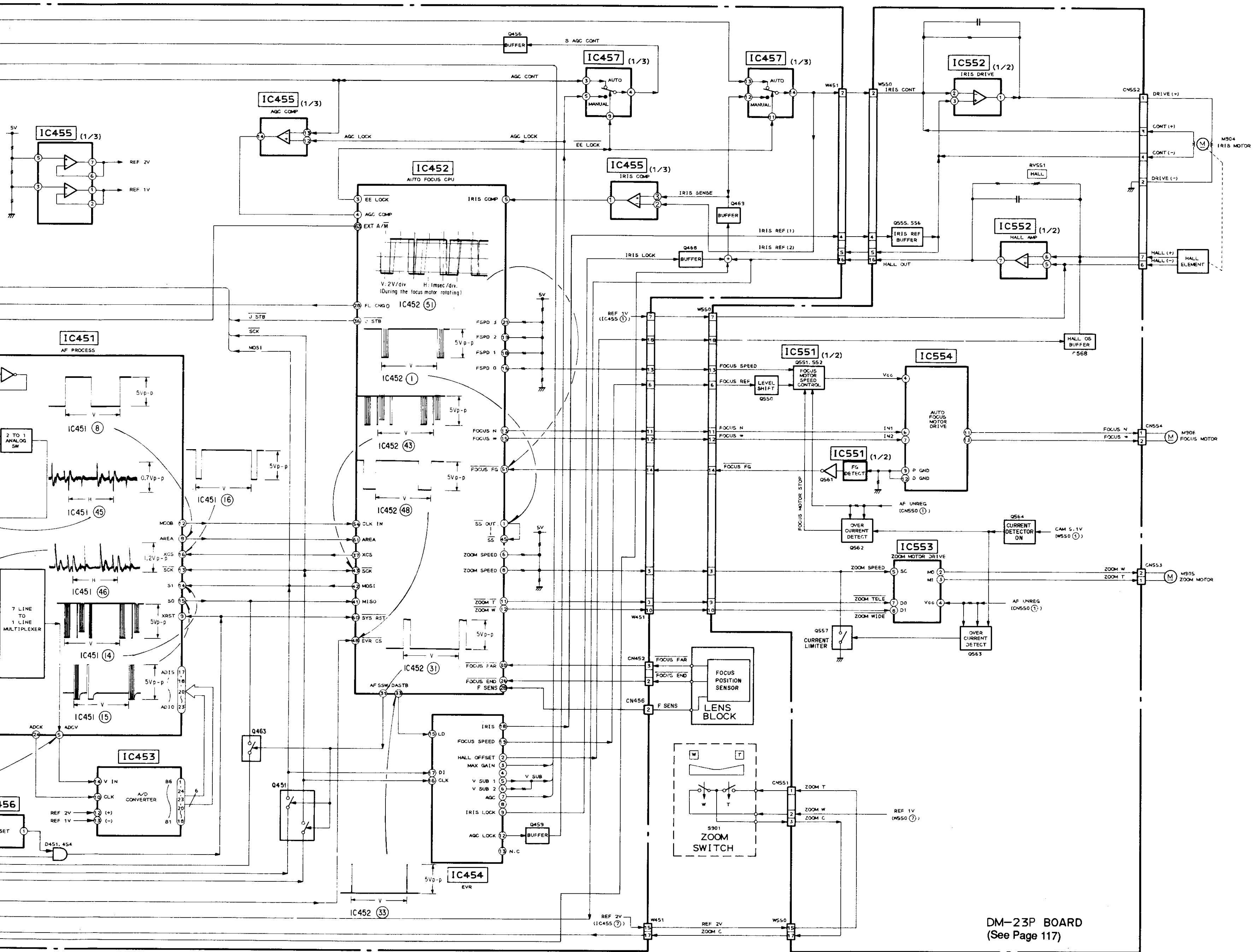
(See Page 219)
MX-7 BOARD
IC003
SIGNAL SEPARATION / IRIS CONTROL
IC006
SAMPLING
IC004
CCD COMPENSATOR
IC007
TIMING GENERATOR
IC261
SYNC GENERATOR
IC002
MATRIX
IC001
1H DELAY
IC003
EVR
IC003
1H DELAY
W222
W301
S1 OUT
S2 OUT
Y OUT
DC OUT
CS OUT
CS GAIN
CS SLICE
DE OUT
AGC OUT
IRIS OUT
IRIS DET
IRIS CONT
WINDOW
IRIS 6dB
VG
AGC CONT
DET IN
AGC CONT IN
S AGC CONT
CLP 0
SP 1
SP 2
XDL 1
XDL 2
CLP 1
CLP 2
CLP 3
ID
SHUTTER EN
DATA
CLK
STB
MODE
VD
HD
CL OUT
CK IN
28.3750MHz OSC
NT/PAL
BUFFER
HOLD BUFFER
AGC DET
WINDOW PULSE GENERATOR
AGC CONT BUFFER
SYNC GENERATOR
PHASE COMP
DIVIDER
WND
SYNC
BLK
BF
FLD
LALT
4FSC
AF YH
C1 GAIN
C2 GAIN
Y1 GAIN
CLAMP
DELAY
R OUT
B OUT
G OUT
DC OUT
R MTX
B MTX
CS GAIN
CS Y OUT
VCS GAIN
AP GAIN
OFFSET
SLICE
Y IN
Y DL OUT
Y GAIN
AGC MIX
YH OUT
YL-YH OUT
BLANKING
L302, C305 14.19MHz BPF
FL301,302
FL303,304
FL306
MATRIX
DELTA R
DELTA B
TITLE PEDESTAL
C-PED
R-Y GAIN
B-Y GAIN
R-Y HUE
B-Y HUE
TITLE A/D
CHARACTER
R GAIN
B GAIN
AWB SIG
EVR SIG
CPA SIG
AD EN
C BLK
S AGC CONT
BURST LEVEL
DT-73 ⑮, ⑯ CAM REC
DT-73 ⑧, ⑪ CAM REC
DT-73 ⑨ CAM REC
DT-73 ① CAM REC
DT-73 ③ CAM REC
IC261 ㉙ CAM REC
IC261 ① CAM REC
IC261 ㉜ CAM REC
IC261 ㉛ CAM REC
IC261 ㉚ CAM REC
MX-7 ㊴ CAM REC
MX-7 ㉓ CAM REC
MX-7 ㉖ CAM REC
MX-7 ㉕ CAM REC
MX-7 ㉒ CAM REC
MX-7 ㉚ CAM REC
IC304 ㊺ CAM REC
IC304 ① CAM REC
IC304 ㊵ CAM REC
28.3750MHz
14.19MHz
7.14MHz



VC-55P BOARD (1/2)
(See Page 109)
(See Page 221)
CP-20P BOARD
CHECK POINT ARRAY
Y(AGC) OUT
SHTTER EN
YO
YI
CO
CI
V SUB
CCD OUT
ID
YH(MIX OUT)
MODE
G OUT
GND
AW ADJ
CAM ADJ
IC001
1H DELAY
IC003
EVR
IC305
EVR
IC001
PROCESS
IC002
BLANKING/CLAMP
IC304
ENCODER
IC306
A-D CONV
DELTA R
DELTA B
TITLE PEDESTAL
C-PED
R-Y GAIN
B-Y GAIN
R-Y HUE
B-Y HUE
TITLE A/D
CHARACTER
R GAIN
B GAIN
CI GAIN
YI GAIN
C LEVEL
BURST LEVEL
HUE CONT
SYNC LEVEL
SET UP
WHITE CLIP
Y LEVEL
APERTURE
YH LEVEL
C2 GAIN
TITLE A/D
CHARACTER
MX-7 ㉓ CAM REC
MX-7 ㉖ CAM REC
MX-7 ㉕ CAM REC
MX-7 ㉒ CAM REC
MX-7 ㉚ CAM REC
IC304 ㉔ CAM REC
IC304 ㊺ CAM REC
IC304 ① CAM REC
IC304 ㊵ CAM REC
IC304 ㉒ CAM REC
0.35Vp-p
0.25Vp-p
0.5Vp-p
0.8Vp-p
0.45Vp-p
1Vp-p
BUFFER
CLAMP
1H DELAY
LPF
CLP
GC
SLICE
COMP
MAX
BLANKING
HD MIX
MATRIX
YL MATRIX
GATE DET
PED
GATE
YL MIX
TITLE (R-Y) MIX
TITLE (B-Y) MIX
TY MATRIX
MODULATOR
DET
BLANKING FADER SUPRESS
BURST GATE
MOD
1/2
1/2 R ALT
SYNC CHARACTER MIX
GAIN CONTROL
WHITE CLIP
Y FADER
Y BLK
SHP CLP
0.12 µsec DELAY
LEVEL SHIFT
4.43MHz BPF
C OUT BUFFER
Y OUT BUFFER
ADJUST DC MIX
SYNC TIP CLAMP
SW
MIX
DELAY
AMP
AWB SIG
EVR SIG
CPA SIG
AD EN
CN301
CAM C
CAM Y
DIGITAL PICTURE (DI-21P BOARD)
W302
FADER CONT
SYSTEM CONTROL (SS-95P BOARD)
TB
TG
TR
TC BLK
TY MIX
TY BLK
TITLE A/D
VD
HD
DIGITAL TITLE (SS-95P BOARD)

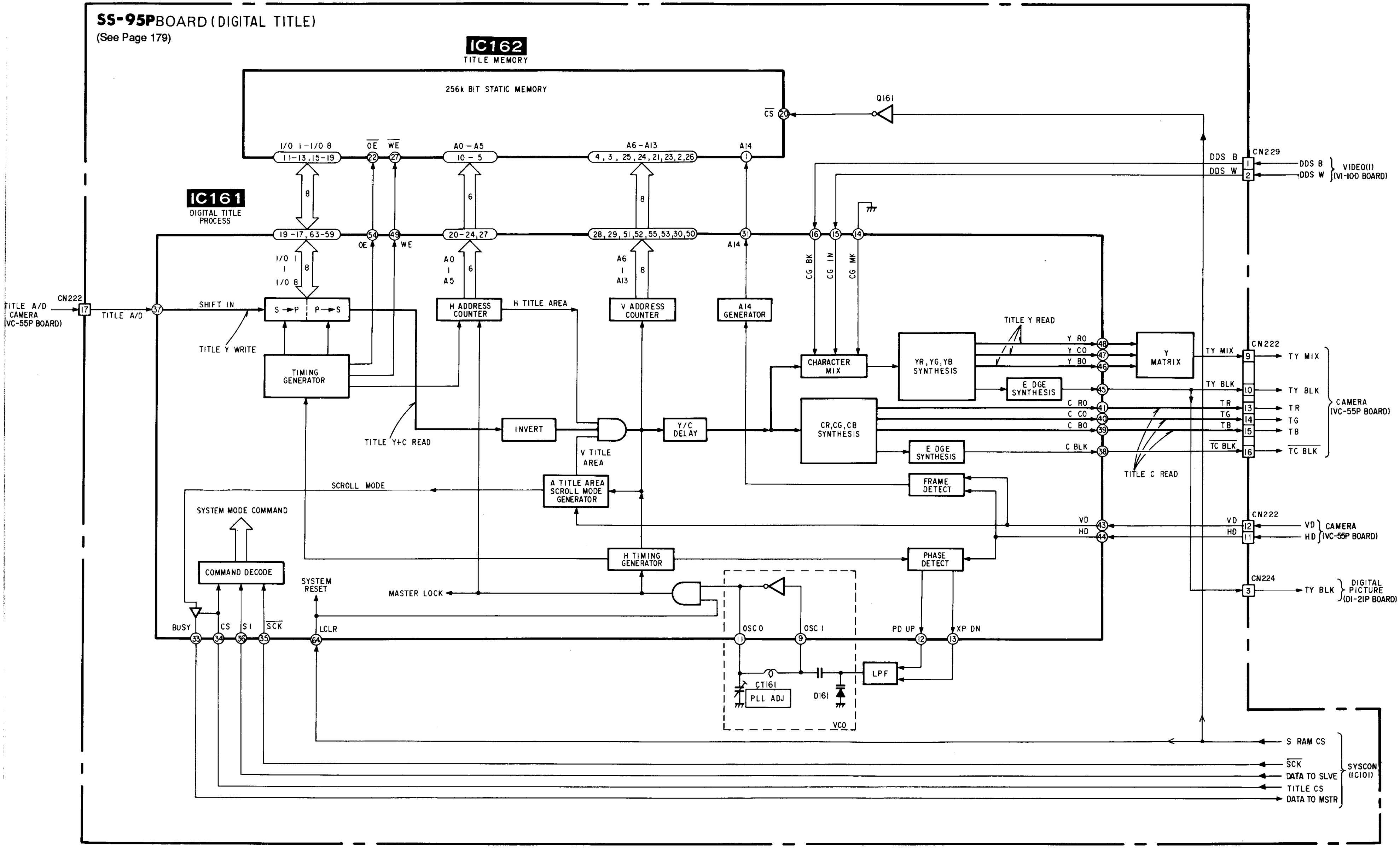
3-4. AUTO FOCUS BLOCK DIAGRAM


CN451
IRIS CONT
S AGC CONT
AGC CONT
MAX GAIN
V SUB CONT
AGC REF
WIND
CAMERA (VC-54P)
V SUB
AGC
IC455 (1/3)
5V
REF 2V
REF 1V
IC455 (1/3)
AGC COMP
AGC LOCK
Q456
BUFFER
S AGC CONT
IC457 (1/3)
AUTO
MANUAL
EE LOCK
IC457 (1/3)
W451
W550
IRIS CONT
IC452
AUTO FOCUS CPU
EE LOCK
AGC COMP
EXT A/M
IRIS COMP
IC455 (1/3)
IRIS COMP
IRIS SENSE
Q469
BUFFER
IRIS REF (1)
IRIS REF (2)
Q468
BUFFER
IRIS LOCK
HALL OUT
Q555
IRIS BUF
V: 2V/div H: 1msec/div.
(During the focus motor rotating)
FL CNG O
IC452 (51)
J STB
CN455
J STB
MOSI
SCK
SCK
MOSI
D455
0.4Vp-p
IC451 (44)
0.7Vp-p
IC451 (42)
IC451
AF PROCESS
CKP
MC IN
VD
HD
SO IN
S1 IN
2 TO 1 ANALOG SW
5Vp-p
IC451 (8)
0.7Vp-p
IC451 (45)
AF CLK
VD
HD
YH
Q452
HPF 1
Q453
HPF 2
IC457 (1/3)
SWOT
1Vp-p
CN451 (8)
FSPD 3
FSPD 2
FSPD 1
FSPD 0
5Vp-p
IC452 (1)
5Vp-p
IC452 (43)
FOCUS N
FOCUS P
FOCUS FG
5Vp-p
IC452 (48)
5Vp-p
IC451 (16)
SS OUT
SS
ZOOM SPEED
ZOOM SPEED
ZOOM T
ZOOM W
REF 1V (IC455 (1))
IC551 (1/2)
FOCUS SPEED
FOCUS REF
LEVEL SHIFT
Q550
Q551, 552
FOCUS MOTOR SPEED CONTROL
Vcc
IN1
IN2
IC551 (1/2)
FG DETECT
Q561
FOCUS MOTOR STOP
OVER CURRENT DETECT
Q562
ZOOM SPEED
ZOOM TELE
ZOOM WIDE
Q557
CURRENT LIMITER
MCOB
AREA
XCS
SCK
S1
SO
XRST
CLK IN
AREA
XCS
SCK
MOSI
MISO
SYS RST
EVR CS
1.2Vp-p
IC451 (46)
LENS BLOCK
ZOOM POSITION
TP
WP
CN453
ZOOM POSITION
REF 2V (IC455 (7))
REF 1V (IC455 (1))
Q454
AMP
FL451
LPF
Q464,455
RECT
ADRF
AN1 0
AN1 1
AN1 2
AN1 3
AN1 4
AN1 5
7 LINE TO 1 LINE MULTIPLEXER
IC458
IRIS VR AMP
HALL OUT
IRIS VR
AGC CONT
N.C
5Vp-p
IC451 (14)
5Vp-p
IC451 (15)
AD15
AD10
(See Page 206)
FD-13P BOARD(1/3)
RV201
IRIS
OPEN CLOSE
W201
CN454
IRIS VR
IRIS CONT CENTER BIAS
REF 2V
REF 1V
AF DISP
ADCK
ADCV
IC453
V IN
CLK
A/D CONVERTER
REF 2V (+)
REF 1V (-)
B6
B1
Q463
Q451
5Vp-p
IC452 (31)
AF SSW/DASTB
FOCUS FAR
FOCUS END
F SENS
CN452
FOCUS FAR
FOCUS END
FOCUS POSITION SENSOR
LENS BLOCK
CN456
F SENS
IC454
EVR
LD
DI
CLK
IRIS
FOCUS SPEED
HALL OFFSET
MAX GAIN
V SUB 1
V SUB 2
AGC
IRIS LOCK
AGC LOCK
N.C
Q459
BUFFER
V SUB
W
T
S901
ZOOM SWITCH
CN551
ZOOM T
ZOOM W
ZOOM C
REF (W550)
1.4Vp-p
IC451 (5)
IC456
RESET
CAM 5V (CN451 (9))
D451, 454
SYSTEM RESET
SI
SO
SCK
AF CS
CAMERA (VC-54P)
5Vp-p
IC452 (33)
(See Page 115)
AF-47P BOARD
REF 2V (IC455 (7))
W451
REF 2V
ZOOM C
W550

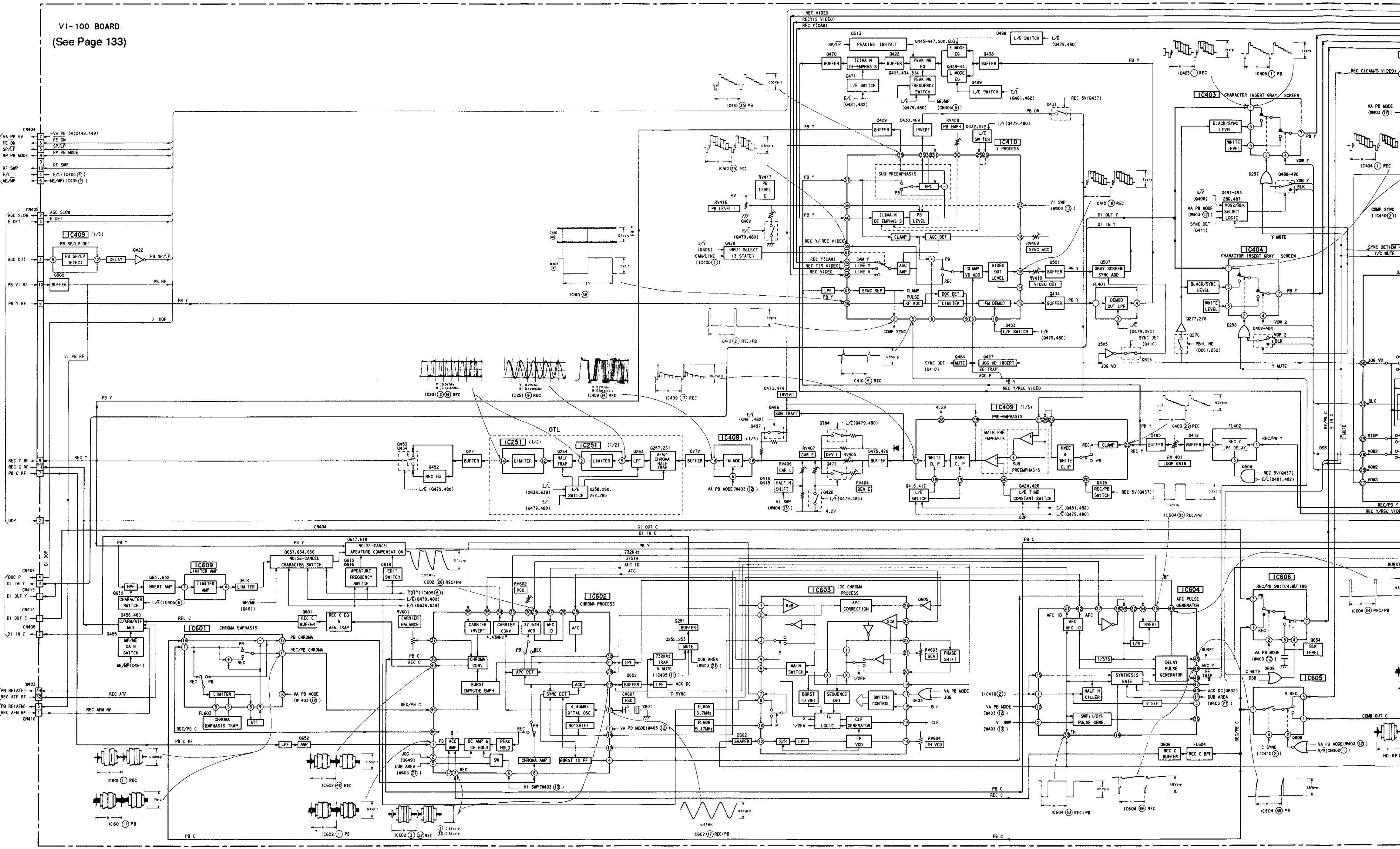

IC457 (1/3)
AUTO
MANUAL
Q456 BUFFER
S AGC CONT
AGC CONT
IC455 (1/3)
AGC COMP
AGC LOCK
EE LOCK
IC455 (1/3)
REF 2V
REF 1V
IC452
AUTO FOCUS CPU
EE LOCK
AGC COMP
EXT A/M
IRIS COMP
V: 2V/div H: 1msec/div.
(During the focus motor rotating)
IC452 (51)
FL CNG O
J STB
SCK
MOSI
FSPD 3
FSPD 2
FSPD 1
FSPD 0
5Vp-p
IC452 ①
IC452 (43)
IC452 (48)
FOCUS N
FOCUS P
FOCUS FG
SS OUT
SS
ZOOM SPEED
ZOOM T
ZOOM W
CLK IN
AREA
XCS
SCK
MOSI
MISO
SYS RST
EVR CS
IC452 (31)
FOCUS FAR
FOCUS END
F SENS
AF SSW DASTB
IC451
AF PROCESS
IC451 ⑧
2 TO 1 ANALOG SW
0.7Vp-p
IC451 (45)
IC451 (16)
1.2Vp-p
IC451 (46)
7 LINE TO 1 LINE MULTIPLEXER
IC451 (14)
IC451 (15)
MCOB
AREA
XCS
SCK
S1
S0
XRST
ADIS
ADIO
ADCK
ADCV
IC453
A/D CONVERTER
V IN
CLK
REF 2V
REF 1V
B6
B1
Q463
Q451
D451, 454
IC454
EVR
IRIS
FOCUS SPEED
HALL OFFSET
MAX GAIN
V SUB 1
V SUB 2
AGC
IRIS LOCK
AGC LOCK
N.C
LD
DI
CLK
V SUB
Q459 BUFFER
IC452 (33)
IC457 (1/3)
IC455 (1/3)
IRIS COMP
IRIS SENSE
Q463 BUFFER
IRIS REF (1)
IRIS REF (2)
IRIS LOCK
Q466 BUFFER
W451
W550
IRIS CONT
IC552 (1/2)
IRIS DRIVE
Q555, 556 IRIS REF BUFFER
HALL OUT
RV551 HALL
IC552 (1/2)
HALL AMP
CN552
DRIVE (+)
CONT (+)
CONT (−)
DRIVE (−)
M904 IRIS MOTOR
HALL (+)
HALL (−)
HALL ELEMENT
REF 1V (IC455 ①)
HALL OS BUFFER
Q568
IC551 (1/2)
Q551, 552
FOCUS MOTOR SPEED CONTROL
FOCUS SPEED
FOCUS REF
LEVEL SHIFT
Q550
IC554
AUTO FOCUS MOTOR DRIVE
Vcc
IN1
IN2
P GND
D GND
FOCUS N
FOCUS P
CN554
M906 FOCUS MOTOR
IC551 (1/2)
FG DETECT
Q561
FOCUS FG
FOCUS MOTOR STOP
AF UNREG (CN550 ①)
OVER CURRENT DETECT
Q562
Q564 CURRENT DETECTOR ON
CAM 5.1V (W550 ①)
IC553
ZOOM MOTOR DRIVE
ZOOM SPEED
ZOOM TELE
ZOOM WIDE
SC
D0
D1
M0
M1
Vcc
ZOOM W
ZOOM T
CN553
M905 ZOOM MOTOR
AF UNREG (CN550 ①)
Q557 CURRENT LIMITER
OVER CURRENT DETECT
Q563
CN452
FOCUS FAR
FOCUS END
FOCUS POSITION SENSOR
CN456
F SENS
LENS BLOCK
W
T
S901
ZOOM SWITCH
CN551
ZOOM T
ZOOM W
ZOOM C
REF 1V (W550 ⑦)
REF 2V (IC455 ⑦)
REF 2V
ZOOM C

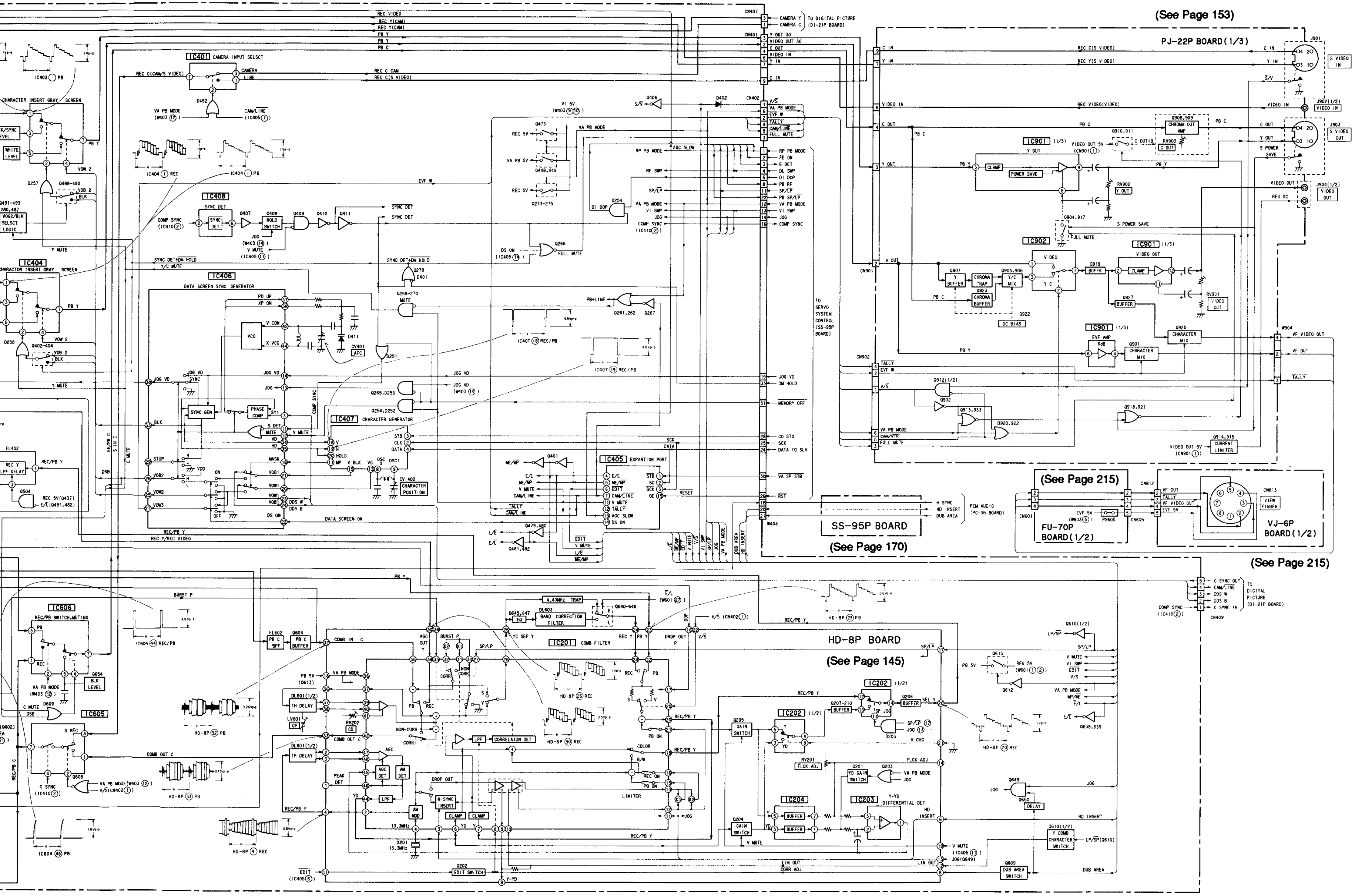
DM-23P BOARD
(See Page 117)

3-5. DIGITAL TITLER BLOCK DIAGRAM

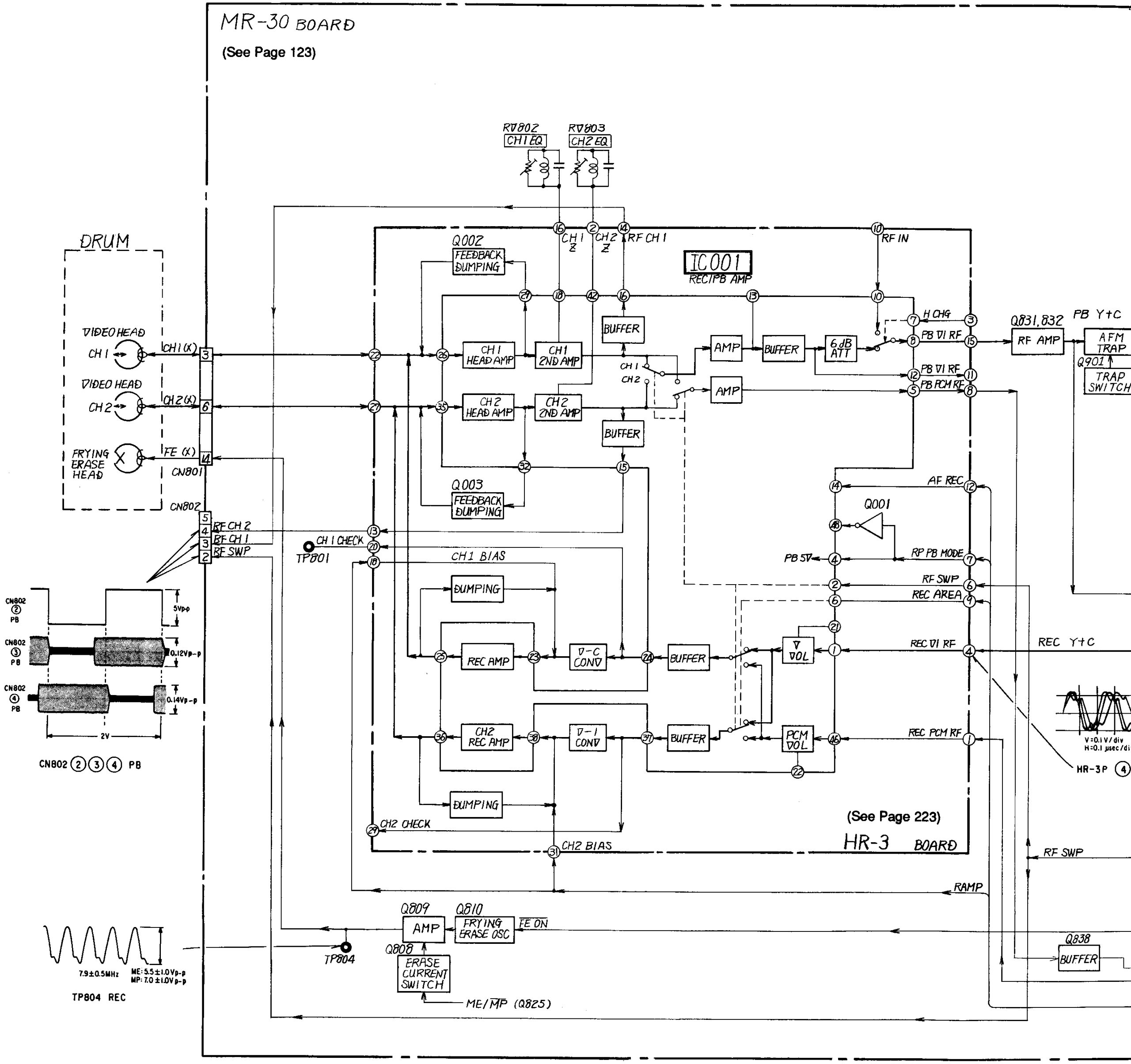

SS-95PBOARD (DIGITAL TITLE)
(See Page 179)
IC162
TITLE MEMORY
256k BIT STATIC MEMORY
CS 20
Q161
I/O 1 – I/O 8
11 – 13, 15 – 19
OE 22
WE 27
A0 – A5
10 – 5
A6 – A13
4, 3, 25, 24, 21, 23, 2, 26
A14 1
8
6
8
IC161
DIGITAL TITLE PROCESS
19 – 17, 63 – 59
54 OE
49 WE
20 – 24, 27
28, 29, 51, 52, 55, 53, 30, 50
31 A14
16 15 14
CG BK
CG IN
CG MK
I/O 1 I I/O 8
A0 I A5
A6 I A13
CN229
DDS B 1
DDS W 2
DDS B
DDS W
VIDEO(1) (VI-100 BOARD)
TITLE A/D CAMERA (VC-55P BOARD)
CN222 17
TITLE A/D
37
SHIFT IN
S → P
P → S
TITLE Y WRITE
H ADDRESS COUNTER
H TITLE AREA
V ADDRESS COUNTER
A14 GENERATOR
TIMING GENERATOR
TITLE Y READ
Y RO 48
Y CO 47
Y BO 46
45
CHARACTER MIX
YR, YG, YB SYNTHESIS
Y MATRIX
TY MIX
TY BLK
E DGE SYNTHESIS
C RO 41
C CO 40
C BO 39
C BLK 38
CR, CG, CB SYNTHESIS
E DGE SYNTHESIS
CN222
9 TY MIX
10 TY BLK
13 TR
14 TG
15 TB
16 TC BLK
TR
TG
TB
TC BLK
CAMERA (VC-55P BOARD)
TITLE C READ
INVERT
Y/C DELAY
TITLE Y+C READ
V TITLE AREA
A TITLE AREA SCROLL MODE GENERATOR
SCROLL MODE
FRAME DETECT
VD 43
HD 44
CN222
VD 12
HD 11
VD
HD
CAMERA (VC-55P BOARD)
SYSTEM MODE COMMAND
COMMAND DECODE
H TIMING GENERATOR
PHASE DETECT
CN224
3
TY BLK
DIGITAL PICTURE (DI-21P BOARD)
SYSTEM RESET
MASTER LOCK
BUSY 33
CS 34
SI 36
SCK 35
LCLR 64
OSC O 11
OSC I 9
PD UP 12
XP DN 13
CT161
PLL ADJ
D161
LPF
VCO
S RAM CS
SCK
DATA TO SLVE
TITLE CS
DATA TO MSTR
SYSCON (IC101)

3-6. VIDEO (1) BLOCK DIAGRAM

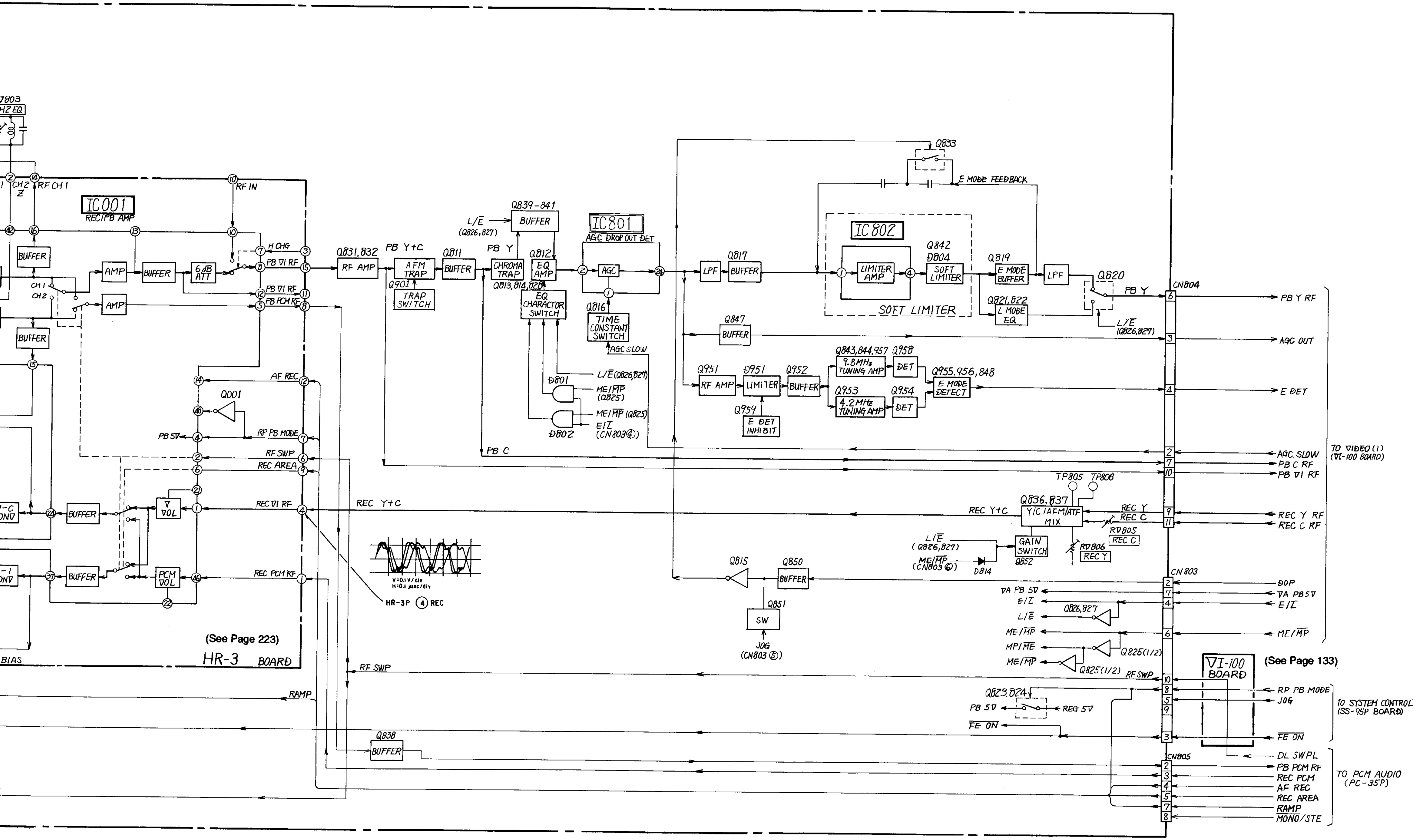

VI-100 BOARD
(See Page 133)
TO VIDEO(2) (MR-30 BOARD)
CN404
VA PB 5V
FE ON
SP/LP
RP PB MODE
RF SWP
E/Ē
ME/MP
CN405
AGC SLOW
E DET
AGC OUT
PB VI RF
PB Y RF
TO VIDEO(2) (MR-30 BOARD)
REC Y RF
REC C RF
PB C RF
DOP
CN406
DOC P
DI IN Y
TO DIGITAL PICTURE (DI-21P BOARD)
CN413
DI OUT Y
CN414
DI OUT C
CN408
DI IN C
TO SERVO (SS-95P BOARD)
PB RF(ATF)
REC ATF RF
TO AFM AUDIO (AS-22P BOARD)
PB RF(AFM)
REC AFM RF
CN410
IC409 (1/3)
PB SP/LP DETECT
DELAY
Q422
Q500
BUFFER
OTL
IC251 (1/2)
LIMITER
HALF TRAP
LPF
AFM/CHROMA HALF TRAP
REC EQ
BUFFER
L/Ē SWITCH
IC409 (1/3)
FM MOD
BUFFER
IC410
Y PROCESS
SUB PREEMPHASIS
HPL
PB LEVEL
(L)MAIN DE-EMPHASIS
CLAMP
AGC DET
CAM Y
LINE Y
LINE V
AGC AMP
CLAMP VD ADD
VIDEO OUT LEVEL
SYNC SEP
CLAMP PULSE
RF AGC
DOC DET
LIMITER
FM DEMOD
INPUT SELECT (3 STATE)
PEAKING INHIBIT
(E)MAIN DE-EMPHASIS
PEAKING EQ
E MODE EQ
L MODE EQ
PEAKING FREQUENCY SWITCH
L/Ē SWITCH
INVERT
PB EMPH
IC403
CHARACTER INSERT GRAY SCREEN
BLACK/SYNC LEVEL
WHITE LEVEL
VOG2/BLK SELECT LOGIC
IC404
CHARACTER INSERT GRAY SCREEN
GRAY SCREEN SYNC ADD
DEMOD OUT LPF
JOG VD INSERT
EE TRAP
IC409 (1/3)
PRE-EMPHASIS
MAIN PRE EMPHASIS
SUB PREEMPHASIS
KNEE & WHITE CLIP
WHITE CLIP
DARK CLIP
L/Ē TIME CONSTANT SWITCH
REC/PB SWITCH
REC Y LPF DELAY
LOOP GAIN
SUB TRACT
CAR E
CAR L
DEV L
DEV E
HALF H SHIFT
IC609
LIMITER AMP
HPF
INVERT AMP
LIMITER
NOISE-CANCEL CHARACTER SWITCH
NOISE-CANCEL APEATURE COMPENSATION
APEATURE FREQUENCY SWITCH
EDIT SWITCH
CHARACTER SWITCH
C/AFM/ATF MIX
MP/ME GAIN SWITCH
REC C BUFFER
REC C EQ & AFM TRAP
IC601
CHROMA EMPHASIS
LIMITER
CHROMA EMPHASIS TRAP
ATT
IC602
CHROMA PROCESS
CARRIER BALANCE
CARRIER INVERT
CARRIER CONV
37.5fH VCO
AFC ID
AFC
CHROMA CONV
BURST EMPH/DE EMPH
APC DET
ACK
SYNC DET
4.43MHz X'TAL OSC
90°SHIFT
ACC AMP
DC AMP & CH HOLD
PEAK HOLD
SW
CHROMA AMP
BURST ID FF
732KHz TRAP V MUTE
MUTE
BUFFER
FSC
IC603
JOG CHROMA PROCESS
APC CORRECTION
GCA
MAIN SWITCH
BURST ID DET
SEQUENCE DET
SWITCH CONTROL
1IL LOGIC
CLF GENERATOR
FH VCO
SHAPER
S/H
PHASE SHIFT
IC604
AFC PULSE GENERATOR
AFC ID
DELAY PULSE GENERATOR
SYNTHESIS GATE
HALF H KILLER
V SEP
SWPx1/2H PULSE GENE.
INVERT
IC606
REC/PB SWITCH, MUTING
BLK LEVEL
IC605
REC C BUFFER
REC C BPF
COMB OUT C
HD-8P


(See Page 153)
PJ-22P BOARD(1/3)
S VIDEO IN
S VIDEO OUT
VIDEO IN
VIDEO OUT
IC401 CAMERA INPUT SELSCT
IC408 SYNC DET
IC406 DATA SCREEN SYNC GENERATOR
IC404 CHARACTER INSERT GRAY SCREEN
IC407 CHARACTER GENERATOR
IC405 EXPANTION PORT
IC901
IC902
CN407
CN401
CN402
CN901
CN902
TO DIGITAL PICTURE (DI-21P BOARD)
TO SERVO SYSTEM CONTROL (SS-95P BOARD)
SS-95P BOARD
(See Page 170)
(See Page 215)
FU-70P BOARD(1/2)
VJ-6P BOARD(1/2)
VIEW FINDER
(See Page 215)
TO DIGITAL PICTURE (DI-21P BOARD)
CN409
HD-8P BOARD
(See Page 145)
IC201 COMB FILTER
IC202
IC203 Y-YD DIFFERENTIAL DET
IC204
IC606 REC/PB SWITCH,MUTING
IC605
DL603 BAND CORRECTION FILTER
4.43MHz TRAP
DL601(1/2) 1H DELAY
CORRELATION DET
LIMITER
EDIT SWITCH
DUB AREA SWITCH
Y COMB CHARACTER SWITCH

3-7. VIDEO (2) BLOCK DIAGRAM

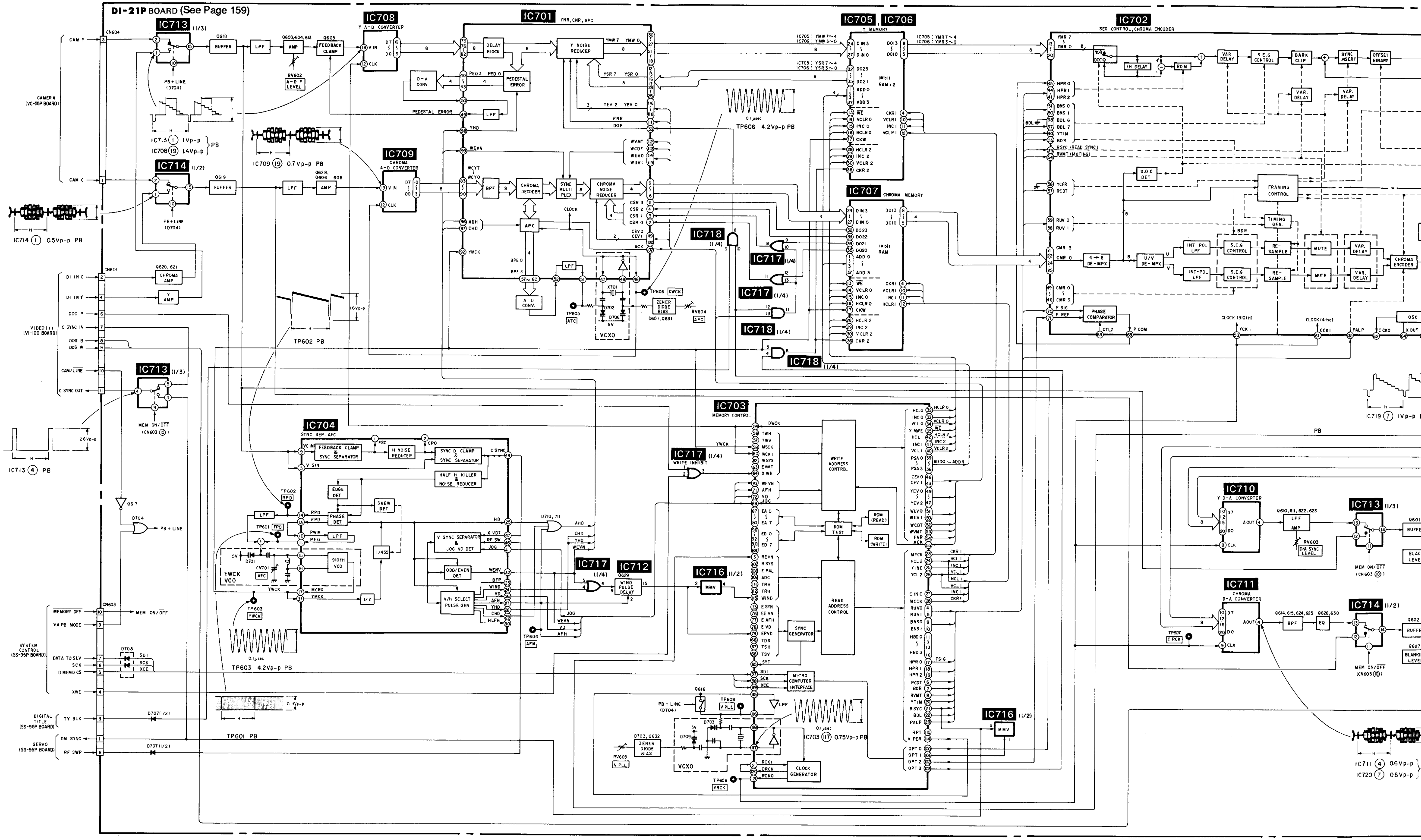


MR-30 BOARD
(See Page 123)
DRUM
VIDEO HEAD CH 1
VIDEO HEAD CH 2
FRYING ERASE HEAD
CH1 (X)
CH2 (X)
FE (X)
CN801
CN802
RF CH 2
RF CH 1
RF SWP
CN802 ② PB
CN802 ③ PB
CN802 ④ PB
5Vp-p
0.12Vp-p
0.14Vp-p
2V
CN802 ②③④ PB
7.9±0.5MHz
ME: 5.5±1.0Vp-p
MP: 7.0±1.0Vp-p
TP804 REC
TP804
TP801
CH 1 CHECK
RV802 CH1 EQ
RV803 CH2 EQ
CH 1 Z
CH 2 Z
RF CH 1
RF IN
IC001
REC/PB AMP
Q002 FEEDBACK DUMPING
Q003 FEEDBACK DUMPING
CH1 HEAD AMP
CH1 2ND AMP
CH2 HEAD AMP
CH2 2ND AMP
BUFFER
AMP
6dB ATT
H CHG
PB VI RF
PB PCM RF
AF REC
Q001
RP PB MODE
PB 5V
RF SWP
REC AREA
REC VI RF
REC PCM RF
CH1 BIAS
DUMPING
REC AMP
CH2 REC AMP
V-C CONV
V-I CONV
V VOL
PCM VOL
CH2 CHECK
CH2 BIAS
(See Page 223)
HR-3 BOARD
RAMP
Q809 AMP
Q810 FRYING ERASE OSC
FE ON
Q808 ERASE CURRENT SWITCH
ME/MP (Q825)
Q831, 832 RF AMP
PB Y+C
AFM TRAP
Q901 TRAP SWITCH
REC Y+C
V=0.1V/div H=0.1µsec/div
HR-3P ④
RF SWP
Q838 BUFFER

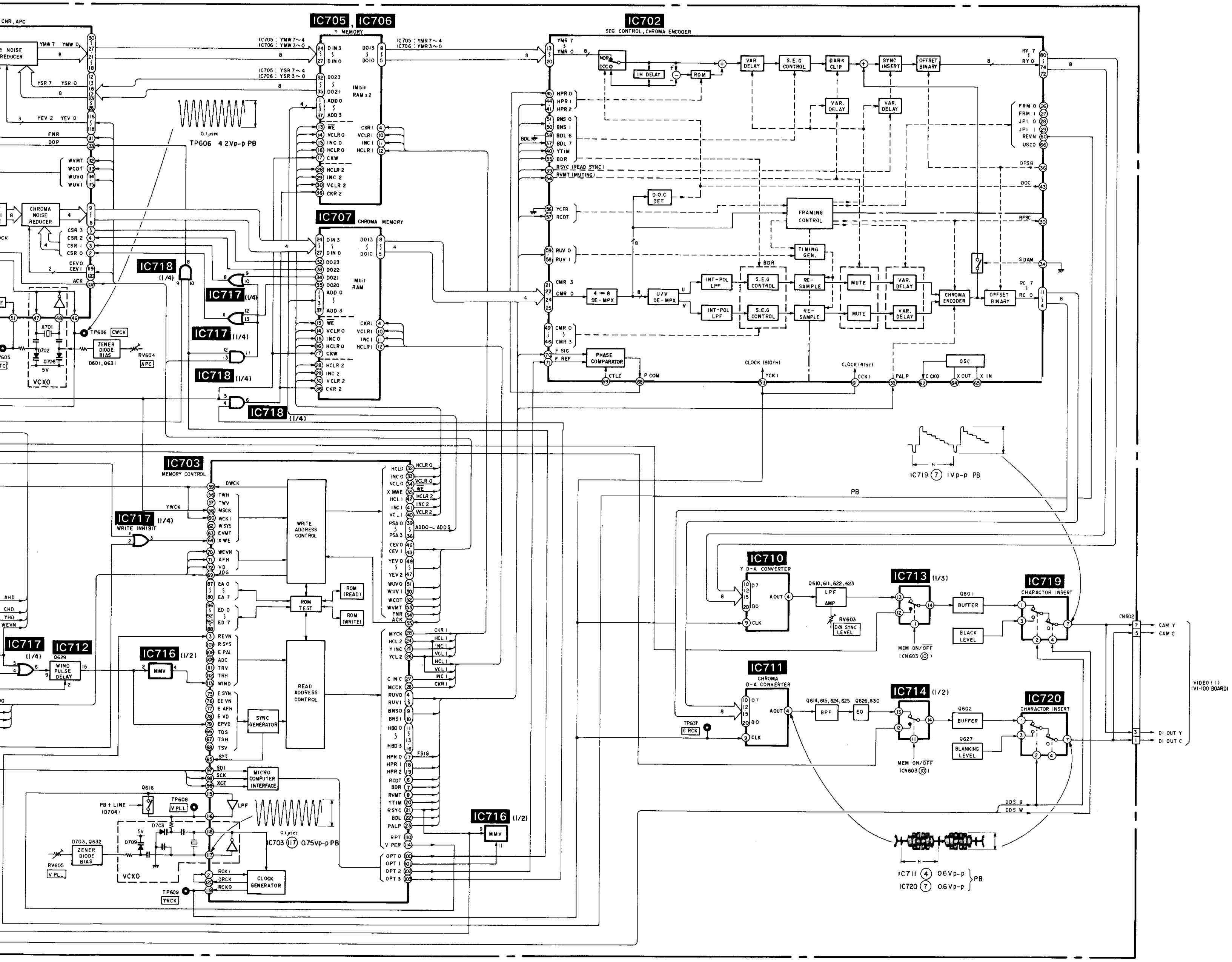


IC001
REC/PB AMP
HZ EQ
CH2
RF CH1
RF IN
BUFFER
AMP
BUFFER
6dB ATT
H CHG
PB VI RF
PB VI RF
PB PCM RF
CH1
CH2
AMP
BUFFER
AF REC
Q001
PB 5V
RP PB MODE
RF SWP
REC AREA
REC VI RF
V VOL
BUFFER
PCM VOL
BUFFER
REC PCM RF
BIAS
(See Page 223)
HR-3 BOARD
Q831,832
RF AMP
PB Y+C
AFM TRAP
Q901
TRAP SWITCH
Q811
BUFFER
PB Y
CHROMA TRAP
Q813,814,828
Q812
EQ AMP
Q839-841
BUFFER
L/E
(Q826,827)
EQ CHARACTOR SWITCH
D801
D802
L/E (Q826,827)
ME/MP (Q825)
ME/MP (Q825)
E/I (CN803④)
IC801
AGC DROP OUT DET
AGC
Q816
TIME CONSTANT SWITCH
AGC SLOW
PB C
REC Y+C
V=0.1V/div
H=0.1 µsec/div
HR-3P ④ REC
LPF
Q817
BUFFER
Q833
E MODE FEEDBACK
IC802
LIMITER AMP
Q842
D804
SOFT LIMITER
SOFT LIMITER
Q819
E MODE BUFFER
LPF
Q820
Q821,822
L MODE EQ
L/E (Q826,827)
PB Y
Q847
BUFFER
Q951
RF AMP
D951
LIMITER
Q952
BUFFER
Q959
E DET INHIBIT
Q843,844,957
9.8MHz TUNING AMP
Q958
DET
Q953
4.2MHz TUNING AMP
Q954
DET
Q955,956,848
E MODE DETECT
TP805
TP806
Q836,837
Y/C/AFM/ATF MIX
REC Y
REC C
RV805
REC C
RV806
REC Y
L/E (Q826,827)
ME/MP (CN803⑥)
D814
GAIN SWITCH
Q852
Q815
Q850
BUFFER
Q851
SW
JOG (CN803⑤)
VA PB 5V
E/I
L/E
Q826,827
ME/MP
MP/ME
Q825(1/2)
ME/MP
Q825(1/2)
RF SWP
RF SWP
RAMP
Q823,824
PB 5V
REG 5V
FE ON
Q838
BUFFER
CN804
CN803
CN805
PB Y RF
AGC OUT
E DET
AGC SLOW
PB C RF
PB VI RF
REC Y RF
REC C RF
TO VIDEO (1) (VI-100 BOARD)
DOP
VA PB5V
E/I
ME/MP
VI-100 BOARD
(See Page 133)
RP PB MODE
JOG
FE ON
TO SYSTEM CONTROL (SS-95P BOARD)
DL SWPL
PB PCM RF
REC PCM
AF REC
REC AREA
RAMP
MONO/STE
TO PCM AUDIO (PC-35P)

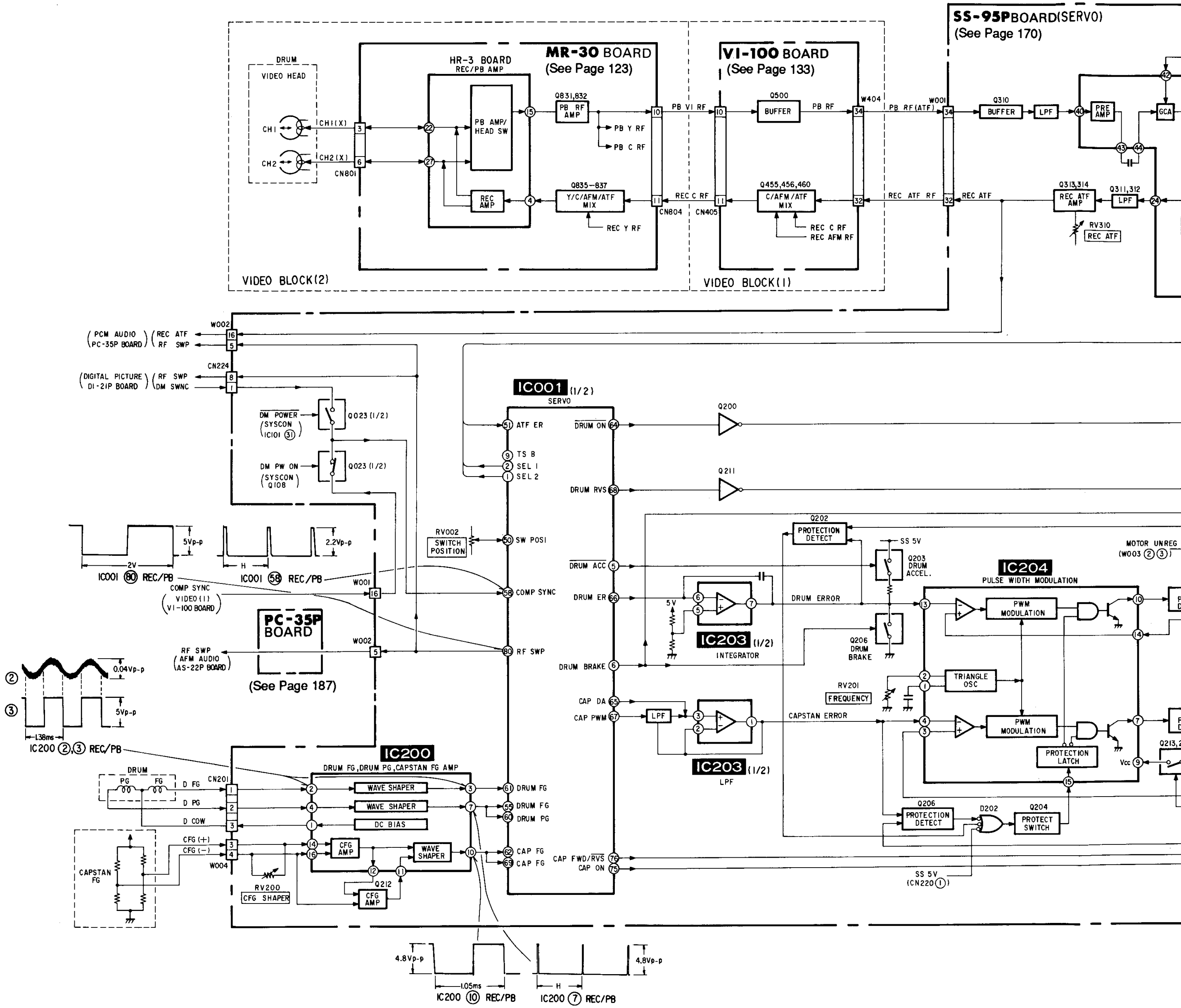
3-8. DEGITAL PICTURE BLOCK DIAGRAM

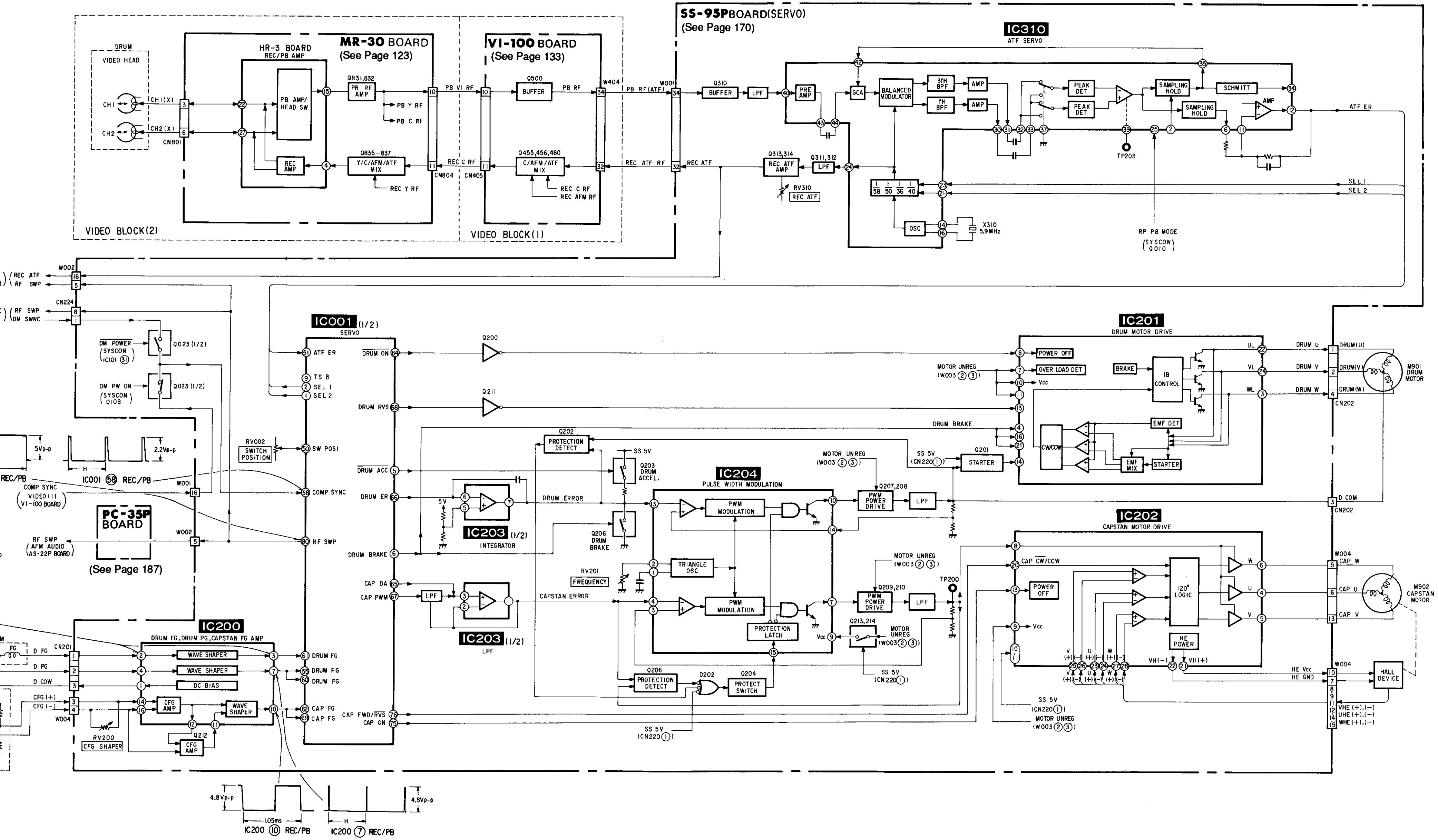


DI-21P BOARD (See Page 159)
IC713 (1/3)
IC714 (1/2)
IC708 Y A-D CONVERTER
IC709 CHROMA A-D CONVERTER
IC701 YNR, CNR, APC
IC705, IC706 Y MEMORY
IC707 CHROMA MEMORY
IC702 SEG CONTROL, CHROMA ENCODER
IC703 MEMORY CONTROL
IC704 SYNC SEP, AFC
IC710 Y D-A CONVERTER
IC711 CHROMA D-A CONVERTER
IC712 WIND PULSE DELAY
IC716 (1/2) MMV
IC717 (1/4) WRITE INHIBIT
IC718 (1/4)
CAMERA (VC-55P BOARD)
CAM Y
CAM C
CN604
CN601
CN603
VIDEO (1) (VI-100 BOARD)
DI IN C
DI IN Y
DOC P
C SYNC IN
DOS B
DOS W
CAM/LINE
C SYNC OUT
SYSTEM CONTROL (SS-95P BOARD)
MEMORY OFF
VA PB MODE
DATA TO SLV
SCK
D MEMD CS
XWE
DIGITAL TITLE (SS-95P BOARD)
TY BLK
SERVO (SS-95P BOARD)
DM SYNC
RF SWP
BUFFER
LPF
AMP
FEEDBACK CLAMP
RV602 A-D Y LEVEL
DELAY BLOCK
Y NOISE REDUCER
PEDESTAL ERROR
D-A CONV.
BPF
CHROMA DECODER
SYNC MULTI PLEX
CHROMA NOISE REDUCER
APC
A-D CONV.
VCXO
ZENER DIODE BIAS
RV604 APC
TP605 ATC
TP606 CWCK
TP606 4.2Vp-p PB
1Mbit RAM x 2
1Mbit RAM
NOR DOC
1H DELAY
ROM
VAR DELAY
S.E.G CONTROL
DARK CLIP
SYNC INSERT
OFFSET BINARY
D.O.C DET
FRAMING CONTROL
TIMING GEN.
4→8 DE-MPX
U/V DE-MPX
INT-POL LPF
RE-SAMPLE
MUTE
CHROMA ENCODER
PHASE COMPARATOR
OSC
FEEDBACK CLAMP & SYNC SEPARATOR
H NOISE REDUCER
SYNC D CLAMP & SYNC SEPARATOR
HALF H KILLER & NOISE REDUCER
EDGE DET
SKEW DET
PHASE DET
910fH VCO
YWCK VCO
V SYNC SEPARATOR & JOG VD DET
ODD/EVEN DET
V/H SELECT PULSE GEN
1/455
1/2
WRITE ADDRESS CONTROL
ROM TEST
ROM (READ)
ROM (WRITE)
READ ADDRESS CONTROL
SYNC GENERATOR
MICRO COMPUTER INTERFACE
CLOCK GENERATOR
TP601 FPD
TP602 RPD
TP603 YWCK
TP604 AFM
TP607 CRCK
TP608 VPLL
TP609 YRCK
RV603 D/A SYNC LEVEL
RV605 VPLL
MEM ON/OFF (CN603 ⑩)
PB + LINE (D704)
IC713 ① 1Vp-p
IC708 ⑲ 1.4Vp-p PB
IC709 ⑲ 0.7Vp-p PB
IC714 ① 0.5Vp-p PB
IC713 ④ PB
2.6Vp-p
16Vp-p
TP602 PB
TP603 4.2Vp-p PB
TP601 PB
0.13Vp-p
IC703 ⑰ 0.75Vp-p PB
IC719 ⑦ 1Vp-p
IC711 ④ 0.6Vp-p
IC720 ⑦ 0.6Vp-p

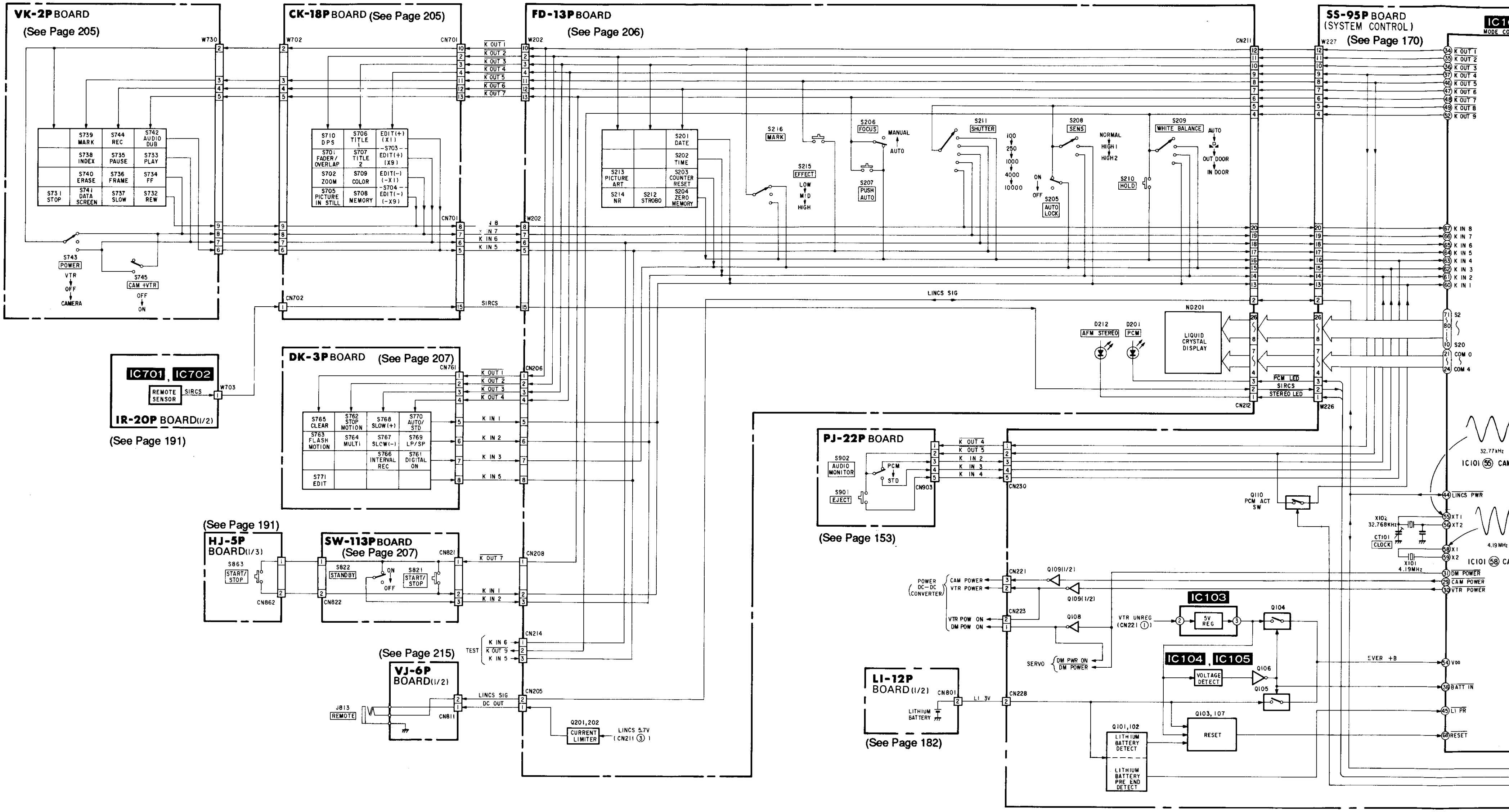

IC705, IC706
Y MEMORY
IC702
SEG CONTROL, CHROMA ENCODER
IC707
CHROMA MEMORY
IC703
MEMORY CONTROL
IC710
Y D-A CONVERTER
IC711
CHROMA D-A CONVERTER
IC713 (1/3)
IC714 (1/2)
IC719
CHARACTOR INSERT
IC720
CHARACTOR INSERT
IC716 (1/2)
IC717 (1/4)
IC718 (1/4)
IC712
IC717 (1/4) WRITE INHIBIT
Y NOISE REDUCER
CHROMA NOISE REDUCER
CNR, APC
1Mbit RAM x2
1Mbit RAM
VAR DELAY
S.E.G CONTROL
DARK CLIP
SYNC INSERT
OFFSET BINARY
1H DELAY
ROM
NOR DOC
VAR. DELAY
D.O.C DET
FRAMING CONTROL
TIMING GEN.
4→8 DE-MPX
U/V DE-MPX
INT-POL LPF
RE-SAMPLE
MUTE
CHROMA ENCODER
PHASE COMPARATOR
OSC
CLOCK (910fH)
CLOCK (4fsc)
WRITE ADDRESS CONTROL
READ ADDRESS CONTROL
ROM TEST
ROM (READ)
ROM (WRITE)
SYNC GENERATOR
MICRO COMPUTER INTERFACE
CLOCK GENERATOR
MMV
WIND PULSE DELAY
Q629
ZENER DIODE BIAS
Q601, Q631
RV604 APC
TP606 CWCK
X701
D702
D706
5V
VCXO
TP606 4.2Vp-p PB
0.1μsec
IC703 (117) 0.75Vp-p PB
Q616
PB + LINE (D704)
TP608 V PLL
LPF
D703, Q632
D709
RV605 V PLL
TP609 YRCK
TP607 C RCK
Q610, 611, 622, 623
LPF AMP
RV603 D/A SYNC LEVEL
Q614, 615, 624, 625
Q626, 630
BPF
EQ
Q601 BUFFER
Q602 BUFFER
BLACK LEVEL
Q627 BLANKING LEVEL
MEM ON/OFF (CN603 (10))
IC719 (7) 1Vp-p PB
IC711 (4) 0.6Vp-p
IC720 (7) 0.6Vp-p
PB
CN602
CAM Y
CAM C
D1 OUT Y
D1 OUT C
VIDEO (1) (VI-100 BOARD)
DDS B
DDS W
IC705 : YMW 7~4
IC706 : YMW 3~0
IC705 : YMR 7~4
IC706 : YMR 3~0
IC705 : YSR 7~4
IC706 : YSR 3~0
YMW 7 YMW 0
YSR 7 YSR 0
YEV 2 YEV 0
FNR
DOP
WVMT
WCDT
WUVO
WUV1
CSR 3
CSR 2
CSR 1
CSR 0
CEV0
CEV1
ACK
DIN 3 ~ DIN 0
DO13 ~ DO10
DO23 ~ DO21
ADD 0 ~ ADD 3
WE
VCLR 0
INC 0
HCLR 0
CKW
HCLR 2
INC 2
VCLR 2
CKR 2
CKR 1
VCLR 1
INC 1
HCLR 1
DO22
DO20
YMR 7 ~ YMR 0
HPR 0
HPR 1
HPR 2
BNS 0
BNS 1
BDL 6
BDL 7
YTIM
BDR
RSYC (READ SYNC)
RVMT (MUTING)
YCFR
RCDT
RUV 0
RUV 1
CMR 3
CMR 0
F SIG
F REF
CTLZ
P COM
YCK 1
CCK 1
PAL P
CCKO
X OUT
X IN
RY 7 ~ RY 0
FRM 0
FRM 1
JP1 0
JP1 1
REVN
USCO
OFSB
DOC
RFSC
SDAM
RC 7 ~ RC 0
DWCK
YWCK
TWH
TWV
MSCK
WCK1
WSYS
EVMT
X WE
WEVN
AFH
VD
JOG
EA 0 ~ EA 7
ED 0 ~ ED 7
REVN
R SYS
E PAL
ADC
TRV
TRH
WIND
E SYN
EE VN
E AFH
E VD
EPVD
TDS
TSH
TSV
SYT
SDI
SCK
XCE
RCK1
ORCK
RCKO
HCLO
INCO
VCLO
X MWE
HCL1
INC1
VCL1
PSA 0 ~ PSA 3
CEVO
CEV1
YEV 0 ~ YEV 2
WUVO
WUV1
WCDT
WVMT
FNR
ACK
MYCK
HCL 2
Y INC
YCL 2
C INC
MCCK
RUVO
RUV1
BNSO
BNS1
HBD 0 ~ HBD 3
HPR 0
HPR 1
HPR 2
RCDT
BDR
RVMT
YTIM
RSYC
BDL
PALP
RPT
V PER
OPT 0
OPT 1
OPT 2
OPT 3
FSIG
ADD0 ~ ADD3
AOUT
CLK
D7
D0
AHD
CHD
YHD
WEVN
8
4
3
2

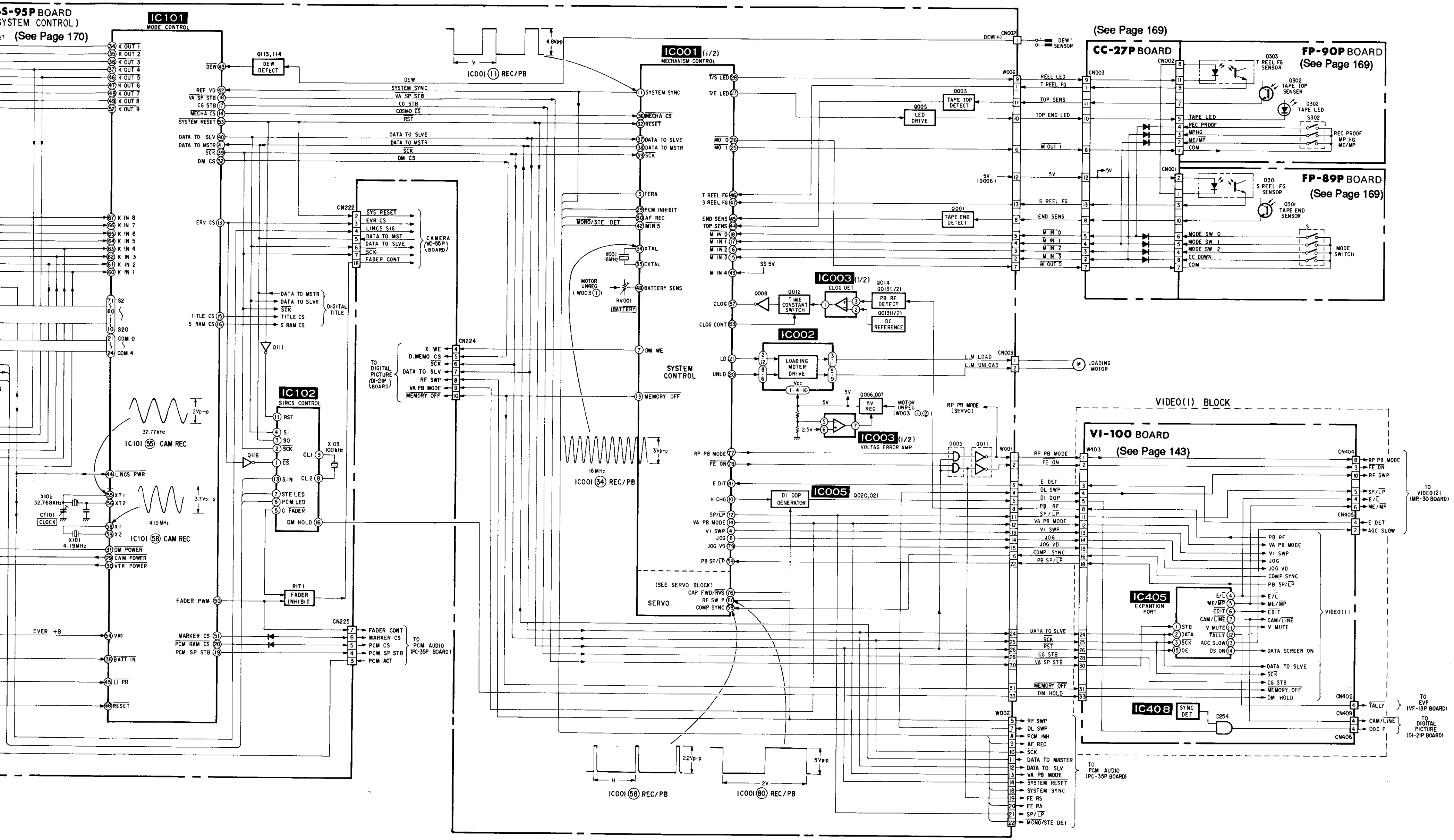
3-9. SERVO BLOCK DIAGRAM


VIDEO BLOCK(2)
DRUM
VIDEO HEAD
CH1
CH2
CH1(X)
CH2(X)
CN801
HR-3 BOARD
REC/PB AMP
PB AMP/ HEAD SW
REC AMP
MR-30 BOARD
(See Page 123)
Q831,832
PB RF AMP
PB Y RF
PB C RF
Q835–837
Y/C/AFM/ATF MIX
REC Y RF
PB VI RF
REC C RF
CN804
CN405
VI-100 BOARD
(See Page 133)
Q500
BUFFER
PB RF
Q455,456,460
C/AFM/ATF MIX
REC C RF
REC AFM RF
W404
VIDEO BLOCK(1)
PB RF(ATF)
REC ATF RF
W001
REC ATF
SS-95P BOARD(SERVO)
(See Page 170)
Q310
BUFFER
LPF
PRE AMP
GCA
Q313,314
REC ATF AMP
Q311,312
LPF
RV310
REC ATF
W002
(PCM AUDIO PC-35P BOARD)
REC ATF
RF SWP
CN224
(DIGITAL PICTURE DI-21P BOARD)
RF SWP
DM SWNC
DM POWER (SYSCON IC101 ㉛)
Q023 (1/2)
DM PW ON (SYSCON Q108)
Q023 (1/2)
IC001 (1/2)
SERVO
ATF ER
TS B
SEL 1
SEL 2
DRUM ON
DRUM RVS
Q200
Q211
RV002
SWITCH POSITION
SW POSI
COMP SYNC
RF SWP
DRUM ACC
DRUM ER
DRUM BRAKE
CAP DA
CAP PWM
DRUM FG
DRUM FG
DRUM PG
CAP FG
CAP FG
CAP FWD/RVS
CAP ON
5Vp-p
2V
IC001 ⑧⓪ REC/PB
2.2Vp-p
H
IC001 ⑤⑧ REC/PB
COMP SYNC (VIDEO(1) VI-100 BOARD)
W001
PC-35P BOARD
(See Page 187)
RF SWP (AFM AUDIO AS-22P BOARD)
W002
②
③
0.04Vp-p
5Vp-p
1.38ms
IC200 ②,③ REC/PB
IC200
DRUM FG, DRUM PG, CAPSTAN FG AMP
DRUM
PG
FG
D FG
D PG
D COM
CN201
CFG(+)
CFG(−)
W004
CAPSTAN FG
WAVE SHAPER
WAVE SHAPER
DC BIAS
CFG AMP
WAVE SHAPER
Q212
CFG AMP
RV200
CFG SHAPER
4.8Vp-p
1.05ms
IC200 ⑩ REC/PB
H
4.8Vp-p
IC200 ⑦ REC/PB
Q202
PROTECTION DETECT
SS 5V
Q203
DRUM ACCEL.
Q206
DRUM BRAKE
5V
IC203 (1/2)
INTEGRATOR
DRUM ERROR
RV201
FREQUENCY
LPF
IC203 (1/2)
LPF
CAPSTAN ERROR
IC204
PULSE WIDTH MODULATION
PWM MODULATION
TRIANGLE OSC
PWM MODULATION
PROTECTION LATCH
MOTOR UNREG
(W003 ②③)
Q213,2
Vcc
Q206
PROTECTION DETECT
D202
Q204
PROTECT SWITCH
SS 5V
(CN220①)


SS-95P BOARD (SERVO)
(See Page 170)
IC310
ATF SERVO
MR-30 BOARD
(See Page 123)
VI-100 BOARD
(See Page 133)
HR-3 BOARD
REC/PB AMP
DRUM
VIDEO HEAD
CH1
CH2
CH1(X)
CH2(X)
CN801
PB AMP/ HEAD SW
REC AMP
Q831,832
PB RF AMP
Q835-837
Y/C/AFM/ATF MIX
PB Y RF
PB C RF
REC Y RF
PB VI RF
REC C RF
CN804
CN405
Q500
BUFFER
PB RF
Q455,456,460
C/AFM/ATF MIX
REC C RF
REC AFM RF
W404
W001
PB RF(ATF)
REC ATF RF
REC ATF
VIDEO BLOCK(2)
VIDEO BLOCK(1)
Q310
BUFFER
LPF
PRE AMP
GCA
BALANCED MODULATOR
3fH BPF
fH BPF
AMP
PEAK DET
SAMPLING HOLD
SCHMITT
AMP
ATF ER
TP203
Q313,314
REC ATF AMP
RV310
REC ATF
Q311,312
LPF
OSC
X310 5.9MHz
SEL 1
SEL 2
RP PB MODE
(SYSCON Q010)
W002
REC ATF
RF SWP
CN224
RF SWP
DM SWNC
DM POWER (SYSCON IC101 ③)
Q023(1/2)
DM PW ON (SYSCON Q108)
5Vp-p
2.2Vp-p
H
IC001 ⑱ REC/PB
REC/PB
COMP SYNC
VIDEO(1) VI-100 BOARD
PC-35P BOARD
(See Page 187)
RF SWP
AFM AUDIO
AS-22P BOARD
IC001 (1/2)
SERVO
ATF ER
TS B
SEL 1
SEL 2
RV002
SWITCH POSITION
SW POSI
COMP SYNC
RF SWP
DRUM ON
DRUM RVS
DRUM ACC
DRUM ER
DRUM BRAKE
CAP DA
CAP PWM
DRUM FG
DRUM FG
DRUM PG
CAP FG
CAP FG
CAP FWD/RVS
CAP ON
Q200
Q211
Q202
PROTECTION DETECT
SS 5V
Q203 DRUM ACCEL.
Q206 DRUM BRAKE
IC203 (1/2)
INTEGRATOR
DRUM ERROR
LPF
IC203 (1/2)
LPF
CAPSTAN ERROR
RV201
FREQUENCY
IC204
PULSE WIDTH MODULATION
PWM MODULATION
TRIANGLE OSC
PROTECTION LATCH
Q206
PROTECTION DETECT
D202
Q204
PROTECT SWITCH
SS 5V (CN220①)
MOTOR UNREG (W003②③)
Q207,208
PWM POWER DRIVE
LPF
Q209,210
PWM POWER DRIVE
TP200
Q213,214
MOTOR UNREG (W003②③)
SS 5V (CN220①)
Q201
STARTER
IC201
DRUM MOTOR DRIVE
POWER OFF
OVER LOAD DET
BRAKE
IB CONTROL
EMF DET
CW/CCW
EMF MIX
STARTER
MOTOR UNREG (W003②③)
Vcc
DRUM BRAKE
UL
VL
WL
DRUM U
DRUM V
DRUM W
CN202
M901 DRUM MOTOR
D COM
IC202
CAPSTAN MOTOR DRIVE
CAP CW/CCW
POWER OFF
120° LOGIC
HE POWER
VH(−)
VH(+)
W004
CAP W
CAP U
CAP V
M902 CAPSTAN MOTOR
HE Vcc
HE GND
HALL DEVICE
VHE (+),(−)
UHE (+),(−)
WHE (+),(−)
SS 5V (CN220①)
MOTOR UNREG (W003②③)
IC200
DRUM FG, DRUM PG, CAPSTAN FG AMP
CN201
D FG
D PG
D COM
CFG (+)
CFG (−)
W004
WAVE SHAPER
WAVE SHAPER
DC BIAS
CFG AMP
WAVE SHAPER
Q212
CFG AMP
RV200
CFG SHAPER
4.8Vp-p
1.05ms
IC200 ⑩ REC/PB
H
4.8Vp-p
IC200 ⑦ REC/PB

3-10. SYSTEM CONTROL BLOCK DIAGRAM


VK-2P BOARD
(See Page 205)
W730
S739 MARK
S744 REC
S742 AUDIO DUB
S738 INDEX
S735 PAUSE
S733 PLAY
S740 ERASE
S736 FRAME
S734 FF
S731 STOP
S741 DATA SCREEN
S737 SLOW
S732 REW
S743 POWER
VTR
OFF
CAMERA
S745 CAM +VTR
OFF
ON
CK-18P BOARD (See Page 205)
W702
CN701
S710 DPS
S706 TITLE 1
EDIT(+) (X1)
S703
S701 FADER/ OVERLAP
S707 TITLE 2
EDIT(+) (X9)
S702 ZOOM
S709 COLOR
EDIT(-) (-X1)
S704
S705 PICTURE IN STILL
S708 MEMORY
EDIT(-) (-X9)
K OUT 1
K OUT 2
K OUT 3
K OUT 4
K OUT 5
K OUT 6
K OUT 7
K IN 8
K IN 7
K IN 6
K IN 5
CN702
SIRCS
IC701, IC702
REMOTE SENSOR
SIRCS
W703
IR-20P BOARD(1/2)
(See Page 191)
FD-13P BOARD
(See Page 206)
W202
CN211
S201 DATE
S202 TIME
S213 PICTURE ART
S203 COUNTER RESET
S214 NR
S212 STROBO
S204 ZERO MEMORY
S216 MARK
S215 EFFECT
LOW
MID
HIGH
S206 FOCUS
MANUAL
AUTO
S207 PUSH AUTO
S211 SHUTTER
100
250
1000
4000
10000
ON
OFF
S205 AUTO LOCK
S208 SENS
NORMAL
HIGH1
HIGH2
S210 HOLD
S209 WHITE BALANCE
AUTO
OUT DOOR
IN DOOR
LINCS SIG
ND201
LIQUID CRYSTAL DISPLAY
D212 AFM STEREO
D201 PCM
PCM LED
SIRCS
STEREO LED
CN212
DK-3P BOARD (See Page 207)
CN761
CN206
S765 CLEAR
S762 STOP MOTION
S768 SLOW(+)
S770 AUTO/ STD
S763 FLASH MOTION
S764 MULTI
S767 SLOW(-)
S769 LP/SP
S766 INTERVAL REC
S761 DIGITAL ON
S771 EDIT
K IN 1
K IN 2
K IN 3
K IN 5
(See Page 191)
HJ-5P BOARD(1/3)
S863 START/ STOP
CN862
SW-113P BOARD (See Page 207)
CN821
S822 STANDBY
ON
OFF
S821 START/ STOP
CN822
CN208
CN214
TEST
K IN 6
K OUT 9
(See Page 215)
VJ-6P BOARD(1/2)
J813 REMOTE
CN811
CN205
LINCS SIG
DC OUT
Q201,202 CURRENT LIMITER
LINCS 5.7V (CN211 ③)
SS-95P BOARD (SYSTEM CONTROL)
(See Page 170)
W227
W226
IC1
MODE CO
K OUT 8
K OUT 9
K IN 4
S2
S20
COM 0
COM 4
PJ-22P BOARD
(See Page 153)
S902 AUDIO MONITOR
PCM
STD
S901 EJECT
CN903
CN230
Q110 PCM ACT SW
LINCS PWR
32.77kHz
IC101 ㊺ CA
X102 32.768KHz
CT101 CLOCK
XT1
XT2
X1
X2
X101 4.19MHz
4.19MHz
IC101 ㊿ CA
POWER DC-DC CONVERTER
CAM POWER
VTR POWER
CN221
Q109(1/2)
CN223
VTR POW ON
DM POW ON
Q108
VTR UNREG (CN221 ①)
IC103
5V REG
Q104
SERVO
DM PWR ON
DM POWER
CAM POWER
VTR POWER
IC104, IC105
VOLTAGE DETECT
Q106
Q105
EVER +B
VDD
BATT IN
LI-12P BOARD(1/2)
CN801
LITHIUM BATTERY
LI 3V
CN228
(See Page 182)
Q103,107
RESET
LI PR
Q101,102
LITHIUM BATTERY DETECT
LITHIUM BATTERY PRE END DETECT


SS-95P BOARD
SYSTEM CONTROL)
(See Page 170)
IC101
MODE CONTROL
DEW DETECT
Q113,114
IC001 ⑪ REC/PB
4.8Vpp
IC001 (1/2)
MECHANISM CONTROL
SYSTEM SYNC
MECHA CS
RESET
DATA TO SLVE
DATA TO MSTR
SCK
FERA
PCM INHIBIT
AF REC
MIN 5
XTAL
EXTAL
BATTERY SENS
DM WE
SYSTEM CONTROL
MEMORY OFF
SERVO
(SEE SERVO BLOCK)
CAP FWD/RVS
RF SW P
COMP SYNC
MONO/STE DET
X001 16MHz
MOTOR UNREG (W003 ①)
RV001 BATTERY
CN222
SYS RESET
EVR CS
LINCS SIG
DATA TO MST
DATA TO SLVE
SCK
FADER CONT
CAMERA (VC-55P BOARD)
DIGITAL TITLE
DATA TO MSTR
DATA TO SLVE
TITLE CS
S RAM CS
CN224
X WE
D.MEMO CS
RF SWP
VA PB MODE
MEMORY OFF
TO DIGITAL PICTURE (DI-21P BOARD)
IC102
SIRCS CONTROL
RST
SI
SO
CS
S.IN
STE LED
PCM LED
C FADER
DM HOLD
X103 100kHz
Q111
Q116
32.77kHz
IC101 (55) CAM REC
2Vp-p
3.7Vp-p
4.19MHz
IC101 (58) CAM REC
X102 32.768KHz
CT101 CLOCK
X101 4.19MHz
K OUT 1 – K OUT 9
K IN 1 – K IN 8
S2
S20
COM 0
COM 4
LINCS PWR
XT1
XT2
X1
X2
DM POWER
CAM POWER
VTR POWER
VDD
EVER +B
BATT IN
LI PR
RESET
R171 FADER INHIBIT
FADER PWM
MARKER CS
PCM RAM CS
PCM SP STB
CN225
FADER CONT
MARKER CS
PCM CS
PCM SP STB
PCM ACT
TO PCM AUDIO (PC-35P BOARD)
16MHz
IC001 (34) REC/PB
3Vp-p
2.2Vp-p
IC001 (58) REC/PB
5Vp-p
IC001 (80) REC/PB
T/S LED
T/E LED
MO 0
MO 1
T REEL FG
S REEL FG
END SENS
TOP SENS
M IN 0 – M IN 4
CLOG
CLOG CONT
LD
UNLD
RP PB MODE
FE ON
E DIT
H CHG
SP/LP
VA PB MODE
VI SWP
JOG
JOG VD
PB SP/LP
Q003 TAPE TOP DETECT
Q005 LED DRIVE
Q001 TAPE END DETECT
IC003 (1/2) CLOG DET
Q012 TIME CONSTANT SWITCH
Q014 Q013(1/2) PB RF DETECT
DC REFERENCE
IC002 LOADING MOTER DRIVE
Q006,007 5V REG
IC003 (1/2) VOLTAG ERROR AMP
IC005 DI DOP GENERATOR Q020,021
RP PB MODE (SERVO)
Q005 Q011
DEW SENSOR
(See Page 169)
CC-27P BOARD
FP-90P BOARD
(See Page 169)
D303 T REEL FG SENSOR
Q302 TAPE TOP SENSER
D302 TAPE LED
S302
REC PROOF
MP HG
ME/MP
FP-89P BOARD
(See Page 169)
D301 S REEL FG SENSOR
Q301 TAPE END SENSOR
MODE SW 0
MODE SW 1
MODE SW 2
CC DOWN
MODE SWITCH
L.M LOAD
L.M UNLOAD
LOADING MOTOR
VIDEO(1) BLOCK
VI-100 BOARD
(See Page 143)
RP PB MODE
FE ON
RF SWP
SP/LP
E/L
ME/MP
TO VIDEO(2) (MR-30 BOARD)
E DET
AGC SLOW
IC405 EXPANTION PORT
STB
DATA
SCK
OE
CAM/LINE
V MUTE
TALLY
DS ON
DATA SCREEN ON
VIDEO(1)
IC408 SYNC DET
D254
TO EVF (VF-13P BOARD)
TO DIGITAL PICTURE (DI-21P BOARD)
DOC P
W002
RF SWP
DL SWP
PCM INH
AF REC
DATA TO MASTER
DATA TO SLV
SYSTEM RESET
SYSTEM SYNC
FE RS
FE RA
MONO/STE DET
TO PCM AUDIO (PC-35P BOARD)

3-11. SYSTEM CONTROL INTERFACE

3-11-1. Servo/System Control IC Pin Functions

- **SS-95P board IC001 (CXP80116)**

Pin No.	Port name	I/O	Active	Function
1	SEL2	O	H	ATF control signal
2	SEL1	O	H	
3	FERA	O	H	Video mask area when dubbing (AUDIO DUB)
4	VISWP	O	H	25 Hz, duty 50% signal, when PB
5	$\overline{\text{DRUM ACCEL}}$	O	L	Drum acceleration signal when SLOW, etc.
6	DRUM BRAKE	O	H	Drum deceleration signal when SLOW, etc.
7	$\overline{\text{DMWE}}$	O	L	Permission for memory writing
8	JOG	O	H	Normal/variable speed playback selecting signal for video circuit
9	(TSB)	—	—	Not used
10	H CHG	O	H	Head selecting signal when SLOW/STILL
11	SYSTEM SYNC	O	H	Vd signal synchronized to Comp sync input
12	SP/$\overline{\text{LP}}$	O	H	SP: H, LP: L (mode selecting output)
13	DM ON/OFF	O	H	MEMORY/THROUGH selecting signal, H: MEMORY, L: THROUGH
14	VA PB MODE	O	H	REC/PB selecting signal for video, audio circuits
15	$\overline{\text{M IN3}}$	I	L	Mode input signal from mechanism switches
16	$\overline{\text{M IN2}}$	I	L	
17	$\overline{\text{M IN1}}$	I	L	
18	$\overline{\text{M IN0}}$	I	L	
19	———	—	—	Not used
20	LM UNLOAD	O	H	Control signal for loading motor, H: UNLOADING
21	LM LOAD	O	H	Control signal for loading motor, H: LOADING
22	———	—	—	Not used
23	———	—	—	
24	M OUT2	O	L	Mode control output signal of mechanism switches
25	$\overline{\text{M OUT1}}$	O	L	
26	$\overline{\text{M OUT0}}$	O	L	
27	TOP/END LED	O	H	LED control signal for TOP/END detection of tape
28	$\overline{\text{REEL LED}}$	O	L	LED control signal for reel rotation detection
29	PCM INHIBIT	O	L	PCM recording inhibit signal, Normal: Hi-z, Inhibit: L
30	AF REC	O	H	Hi signal output during after recording mode
31	MP	I		Fixed to "LOW"
32	$\overline{\text{RST}}$	I	L	Reset signal input pin from mode controller
33	GND			
34	XTAL			Pin to connect 16 MHz crystal oscillator
35	EXTAL	I		
36	$\overline{\text{MECHA CS}}$	I	L	Chip select signal from mode control microprocessor
37	DATA TO SLV	I	H	Data that send from mode control microprocessor to servo/system control microprocessor
38	DATA TO MST	O	H	Data that send from servo/system control microprocessor to mode control microprocessor
39	$\overline{\text{CLK}}$	I	L	Clock from mode control microprocessor
40	———			

Pin No.	Port name	I/O	Active	Function
41	E DET	I	H	Auto discrimination result for playback, H: Hi-8, L: NORMAL
42	STE/MONO	I	H	Mode discrimination result for AFM, H: STEREO, L: MONO
43	$\overline{\text{M IN4}}$	I	L	Fixed to "L", not used
44	TOP SENS	I	H	Tape top detection signal
45	END SENS	I	H	Tape end detection signal
46	T REEL FG	I	H	T reel table rotation detection signal
47	S REEL FG	I	H	S reel table rotation detection signal
48	BATT SENS	I		Battery level detection signal
49	———	—	—	Not used
50	SW POSI ADJ	I		Position adjustment for PF SWP
51	ATF ERROR	I		ATF error (ATF lock)
52	AVss			GND pin of A/D converter
53	AVref	I		Reference voltage input pin of A/D converter
54	AVDD			Positive power supply pin of A/D converter
55	DRUM PG	I	H	Drum PG input pin, 60 Hz
56	———	—	—	Not used
57	CLOG	I	H	PB RF detection result input, existence/no existence
58	COMP SYNC	I	H	Video composite sync input pin
59	PB SP/LP	I	H	SP/LP detection signal when PB
60	DRUM PG	I	H	Drum PG input pin
61	DRUM FG	I	H	Drum FG input pin, 600 Hz, duty 50%
62	CAP FG	I	H	Capstan FG input
63	CLOG CONT	O	H	
64	$\overline{\text{DRUM ON}}$	O	L	Drum motor ON/OFF signal
65	CAP D/A	O	H	Capstan servo control signal
66	DRUM D/A	O	H	Drum servo control signal
67	CAP PWM	O	H	PWM output pin for CAP error output (Servo exclusive output pin)
68	DRUM RVS	O	H	Drum motor forward/reverse rotation control signal
69	CAP FG	I	H	Capstan FG input, SP: 1325 Hz, duty 50%
70	———	—	—	Not used
71	NM1		L	Normally "H"
72	VDD			Positive power supply pin
73	GND			GND pin
74	———	—	—	Not used
75	CAP ON	O	H	Capstan motor ON/OFF signal
76	CAP FWD	O	H	Capstan motor forward/reverse rotation control signal
77	$\overline{\text{RP PB MODE}}$	O	L	REC/PB selecting signal for REC/PB amplifier
78	FE ON(FERS)	O	H	Flying erase oscillation ON, OFF signal
79	JOG VD	O	H	Pseudo VD signal when variable speed mode
80	RF SWP	O	H	RF switching pulse output pin (30Hz when PB, duty 50%)

* Active indicates positive logic of signal. In case it is edge, it functions as "H".

3-11-2.

- **SS-95**

Pin No.	
1	S1
2	S1
3	S1
4	S1
5	S
6	S1
7	S1
8	S1
9	S
10	S
11	
12	
13	E
14	M
15	T
16	S
17	C
18	V
19	P
20	P
21	C
22	C
23	C
24	C
25	B
26	V
27	V
28	V
29	C
30	V
31	D
32	D
33	G
34	K
35	K
36	K
37	K
38	B
39	C
40	D

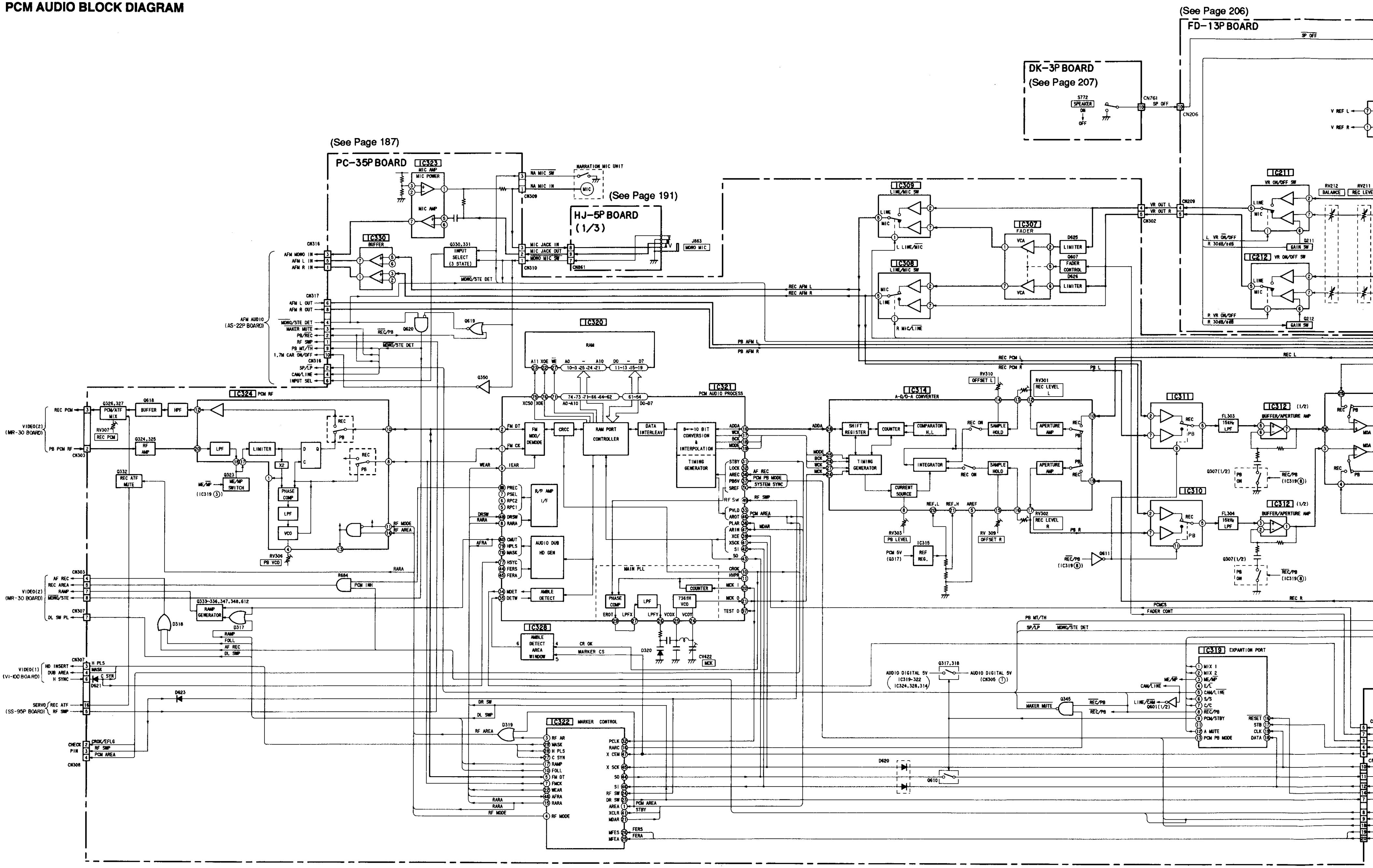
3-11-2. Mode Control IC Pin Function

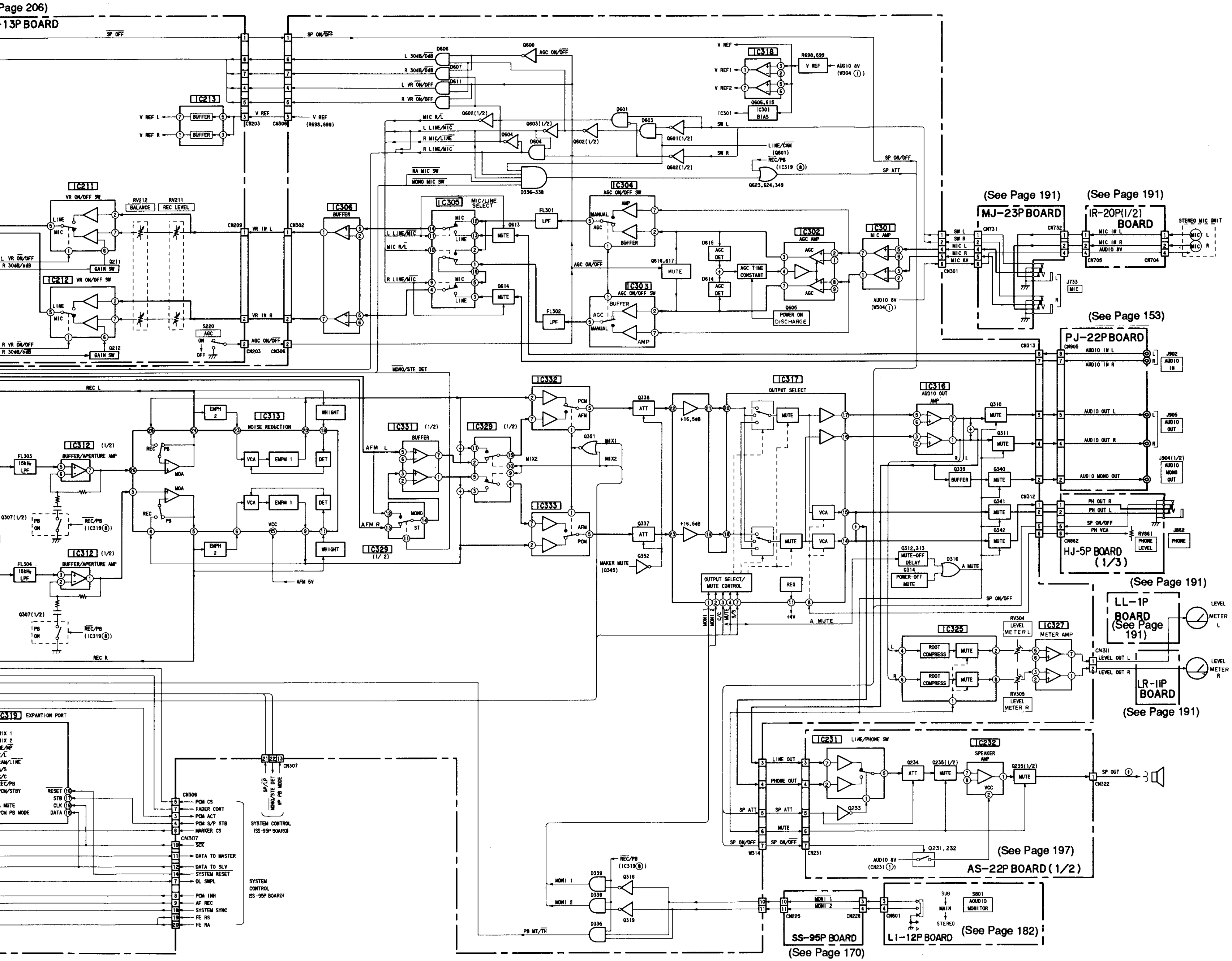
- **SS-95P board IC101 (μPD75316)**

Pin No.	Port name	I/O	Active	Function
1	S12	O	*	LCD segment drive signal
2	S13	O	*	
3	S14	O	*	
4	S15	O	*	
5	S16	O	*	
6	S17	O	*	
7	S18	O	*	
8	S19	O	*	
9	S20	O	*	
10	S21	O	*	
11	———	O	*	—
12	———	O	*	—
13	EVR CS	O	L	Chip select signal to EVR microprocessor (IC301 on VC-55P board)
14	MECHA CS	O	L	Chip select signal to mechanism control microprocessor (IC101 on SS-95P board)
15	TITLE CS	O	H	Chip select signal to titler microprocessor (IC161 on SS-95P board)
16	SRAM CS	O	H	Chip select signal to SRAMI (IC162 on SS-95P board)/titler free-run
17	CG STB	O	H	Strobe signal for character generator
18	VA SP STB	O	H	Strobe signal for video serial/parallel
19	PCM SP STB	O	H	Strobe signal for PCM serial/parallel
20	PCM RAM CS	O	L	RAM chip select signal for PCM
21	COM 0	O	*	LCD drive signal
22	COM 1	O	*	
23	COM 2	O	*	
24	COM 3	O	*	
25	BIAS	O		Fixed to "L"
26	Vcc 0	I		Power supply pin for LCD drive
27	Vcc 1	I		
28	Vcc 2	I		
29	CAM POWER	O	L	Power supply ON/OFF signal for camera
30	VTR POWER	O	L	Power supply ON/OFF signal for VTR
31	DM POWER	O	L	Power supply ON/OFF signal for digital memory
32	DM CS	O	L	Chip select signal for digital memory
33	GND	—	—	—
34	K OUT 1	O	L	Key matrix output 0
35	K OUT 2	O	L	Key matrix output 1
36	K OUT 3	O	L	Key matrix output 2
37	K OUT 4	O	L	Key matrix output 3
38	BATT IN	I	L	Detection of battery pack presence
39	CLK	I/O	L	O: clock from mode controller, I: clock from camera microprocessor
40	DATA TO SLV	O	H	Data that send from mode controller to servo/system controller
41	DATA TO MST	I	H	Data that send from other microprocessors to mode controller
42	REF VD	I	L	System sync
43	DEW	I	L	Dew detection signal
44	LINCS PWR	I	L	Power OFF to ON input signal from remote commander
45	LI PRE END	I	L	Lithium battery PRE END input
46	K OUT 5	O	L	Key matrix output 5
47	K OUT 6	O	L	Key matrix output 6
48	K OUT 7	O	L	Key matrix output 7
49	K OUT 8	O	L	Key matrix output 8
50	FADER PWM	O	H	PWM signal output pin for camera fader
51	MAKER CS	O	L	Chip select signal for video marker
52	K OUT 9	O	L	Key matrix output 9
53	SYSTEM RST	O	L	AF/servo system controller reset signal output pin when power supply ON
54	VDD	—	—	Positive power supply input pin
55	XT1	I		Pin to connect clock oscillator for clock
56	XT2	I		
57	———	—	—	Not used
58	X1	I		Pin to connect main clock oscillator
59	X2	I		
60	K IN 1	I	L	Key matrix input 1
61	K IN 2	I	L	Key matrix input 2
62	K IN 3	I	L	Key matrix input 3
63	K IN 4	I	L	Key matrix input 4
64	K IN 5	I	L	Key matrix input 5
65	K IN 6	I	L	Key matrix input 6
66	K IN 7	I	L	Key matrix input 7
67	K IN 8	I	L	Key matrix input 8
68	RESET	I	L	Reset signal input pin
69	———	O	*	Not used
70	———	O	*	
71		O	*	LCD segment drive signal
72		O	*	
73		O	*	
74		O	*	
75		O	*	
76		O	*	
77		O	*	
78		O	*	
79		O	*	
80		O	*	

* Active indicates positive logic of signal. In case it is edge, it functions as "H". LCD is 1/4 duty.

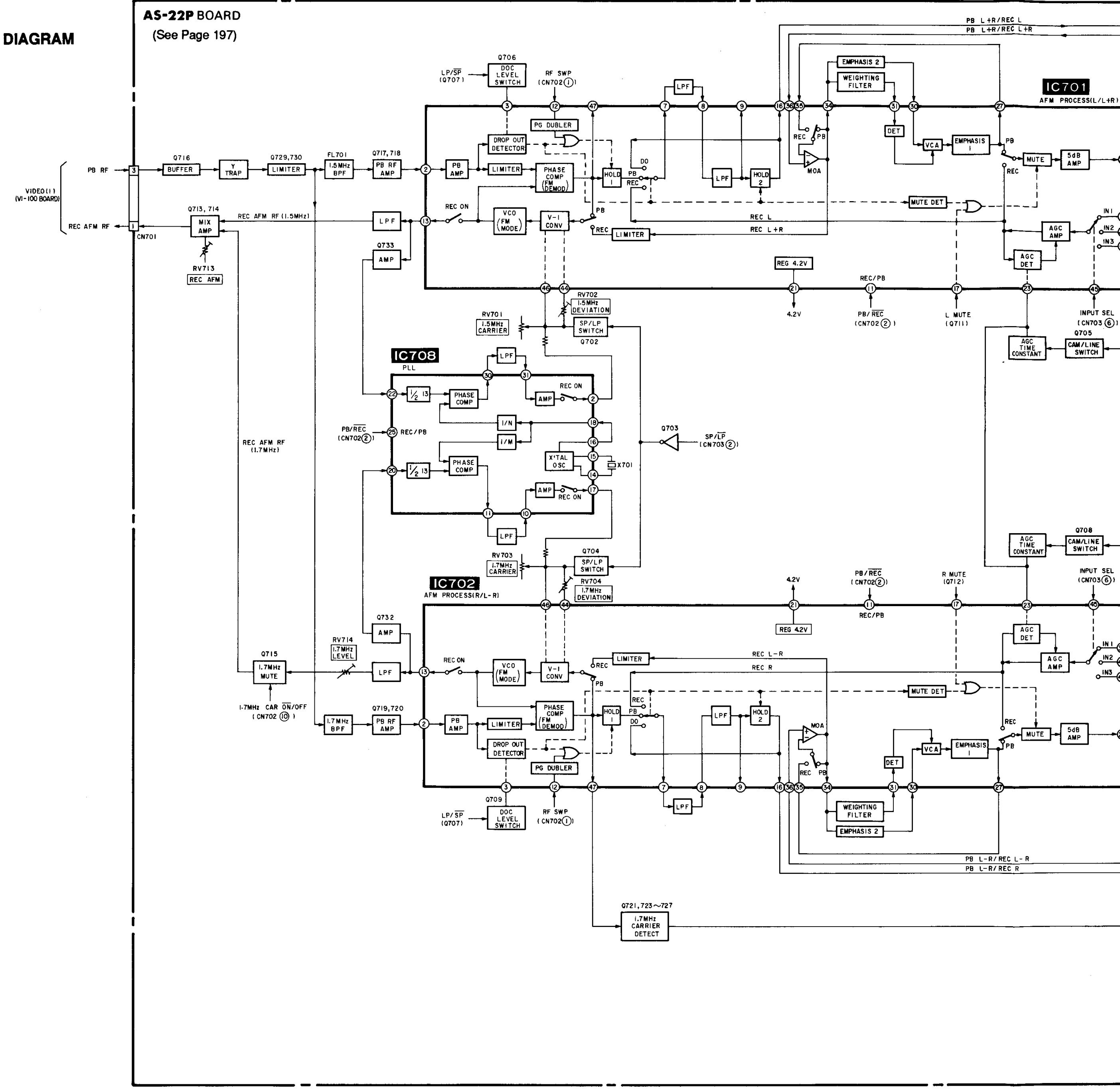
3-12. PCM AUDIO BLOCK DIAGRAM


(See Page 206)
FD-13P BOARD
DK-3P BOARD
(See Page 207)
S772 SPEAKER ON OFF
CN761
SP OFF
CN206
V REF L
V REF R
(See Page 187)
PC-35P BOARD
IC323 MIC AMP MIC POWER
MIC AMP
NA MIC SW
NA MIC IN
NARRATION MIC UNIT
MIC
CN309
(See Page 191)
HJ-5P BOARD (1/3)
MIC JACK IN
MIC JACK OUT
MONO MIC SW
CN310
CN861
J863 MONO MIC
IC330 BUFFER
Q330,331 INPUT SELECT (3 STATE)
CN316
AFM MONO IN
AFM L IN
AFM R IN
CN317
AFM L OUT
AFM R OUT
AFM AUDIO (AS-22P BOARD)
MONO/STE DET
MAKER MUTE
PB/REC
RF SWP
PB MT/TH
1.7M CAR ON/OFF
CN318
SP/LP
CAM/LINE
INPUT SEL
Q620
Q619
REC/PB
MONO/STE DET
Q350
IC320 RAM
IC324 PCM RF
REC PCM
VIDEO(2) (MR-30 BOARD)
PB PCM RF
CN303
Q326,327 PCM/ATF MIX
RV307 REC PCM
Q618 BUFFER
HPF
Q324,325 RF AMP
LPF
LIMITER
X2
PHASE COMP
VCO
RV306 PB VCO
Q332 REC ATF MUTE
Q323 ME/MP SWITCH
ME/MP (IC319 ③)
RF MODE
RF AREA
RARA
R684 PCM INH
AF REC
REC AREA
RAMP
MONO/STE
CN307
DL SW PL
Q333-336,347,348,612 RAMP GENERATOR
D317
D318
FOLL
DL SWP
H PLS
HD INSERT
DUB AREA
H SYNC
VIDEO(1) (VI-100 BOARD)
MASK
C SYN
D621
D623
SERVO (SS-95P BOARD)
REC ATF
RF SWP
CHECK PIN
CROK/EFLG
PCM AREA
CN308
IC321 PCM AUDIO PROCESS
FM MOD/DEMODE
CRCC
RAM PORT CONTROLLER
DATA INTERLEAV
8↔10 BIT CONVERSION & INTERPOLATION
TIMING GENERATOR
R/P AMP I/F
AUDIO DUB HD GEN
AMBLE DETECT
MAIN PLL
PHASE COMP
LPF
736fH VCO
COUNTER
IC328 AMBLE DETECT AREA WINDOW
CR OK
MARKER CS
D320
CV422 MCK
IC322 MARKER CONTROL
D319
DR SW
DL SWP
RF AREA
IC309 LINE/MIC SW
IC308 LINE/MIC SW
L LINE/MIC
R MIC/LINE
IC307 FADER VCA
D625 LIMITER
Q607 FADER CONTROL
D626 LIMITER
REC AFM L
REC AFM R
PB AFM L
PB AFM R
VR OUT L
VR OUT R
CN302
CN209
IC211 VR ON/OFF SW
IC212 VR ON/OFF SW
RV212 BALANCE
RV211 REC LEVEL
Q211 GAIN SW
Q212 GAIN SW
L VR ON/OFF R 30dB/6dB
R VR ON/OFF R 30dB/6dB
REC L
REC PCM L
REC PCM R
PB L
IC314 A-D/D-A CONVERTER
SHIFT REGISTER
COUNTER
COMPARATOR H,L
TIMING GENERATOR
CURRENT SOURCE
INTEGRATOR
SAMPLE HOLD
RV310 OFFSET L
RV301 REC LEVEL L
RV302 REC LEVEL R
APERTURE AMP
RV303 PB LEVEL
IC315 REF REG.
PCM 5V (Q317)
RV309 OFFSET R
REF.L REF.H AREF
IC311
IC310
FL303 15kHz LPF
FL304 15kHz LPF
IC312 (1/2) BUFFER/APERTURE AMP
Q307(1/2)
REC/PB (IC319 ⑧)
Q611
PB R
REC R
PCMCS
FADER CONT
PB MT/TH
SP/LP
MONO/STE DET
IC319 EXPANTION PORT
MIX 1
MIX 2
ME/MP
E/L
CAM/LINE
S/S
C/C
REC/PB
PCM/STBY
A MUTE
PCM PB MODE
RESET
STB
CLK
DATA
Q317,318
AUDIO DIGITAL 5V (IC319-322 IC324,328,314)
AUDIO DIGITAL 5V (CN305 ①)
Q345
MAKER MUTE
LINE/CAM Q601(1/2)
D620
Q610



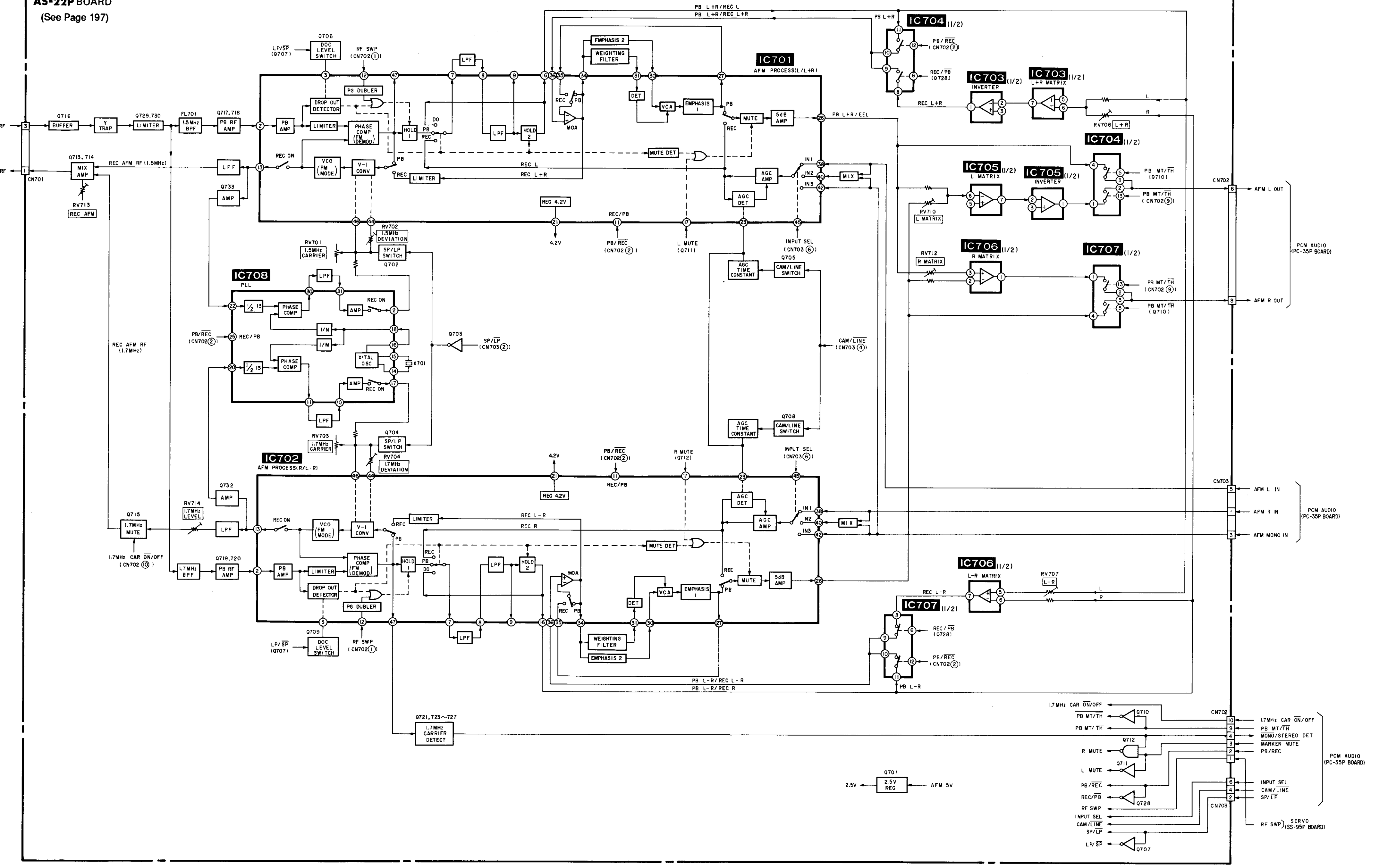
Page 206)
-13P BOARD
SP OFF
SP ON/OFF
IC213
BUFFER
V REF L
V REF R
V REF
V REF (R698,699)
CN203
CN306
D606
D607
D611
L 30dB/0dB
R 30dB/0dB
L VR ON/OFF
R VR ON/OFF
Q600
AGC ON/OFF
IC318
V REF
V REF1
V REF2
R698,699
AUDIO 8V (W304 ①)
Q606,615
IC301 BIAS
MIC R/L
L LINE/MIC
R MIC/LINE
R LINE/MIC
Q602(1/2)
Q603(1/2)
Q604
D601
D603
D604
Q601(1/2)
Q602(1/2)
SW L
SW R
LINE/CAM (Q601)
REC/PB (IC319 ⑧)
Q623,624,349
SP ON/OFF
SP ATT
NA MIC SW
MONO MIC SW
D336-338
IC211
VR ON/OFF SW
LINE
MIC
RV212 BALANCE
RV211 REC LEVEL
CN209
VR IN L
CN302
IC306 BUFFER
IC305 MIC/LINE SELECT
FL301 LPF
Q613 MUTE
IC304 AGC ON/OFF SW
AMP
MANUAL
AGC
BUFFER
IC302 AGC AMP
IC301 MIC AMP
D615 AGC DET
D614 AGC DET
AGC TIME CONSTANT
Q616,617 MUTE
AGC ON/OFF
Q614 MUTE
FL302 LPF
IC303 AGC ON/OFF SW
Q605 POWER ON DISCHARGE
AUDIO 8V (W304 ①)
Q211 GAIN SW
IC212 VR ON/OFF SW
VR IN R
S220 AGC ON OFF
AGC ON/OFF
Q212 GAIN SW
(See Page 191)
MJ-23P BOARD
CN731
CN732
SW L
SW R
MIC L
MIC R
MIC 8V
CN301
J733 MIC
(See Page 191)
IR-20P(1/2) BOARD
MIC IN L
MIC IN R
AUDIO 8V
CN705
CN704
STEREO MIC UNIT
(See Page 153)
PJ-22P BOARD
CN313
CN905
AUDIO IN L
AUDIO IN R
J902 AUDIO IN
AUDIO OUT L
AUDIO OUT R
J905 AUDIO OUT
AUDIO MONO OUT
J904(1/2) AUDIO MONO OUT
MONO/STE DET
REC L
FL303 15kHz LPF
IC312 (1/2) BUFFER/APERTURE AMP
Q307(1/2)
REC/PB (IC319 ⑧)
EMPH 2
IC313 NOISE REDUCTION
WHIGHT
VCA
EMPH 1
DET
MOA
VCC
AFM 5V
FL304 15kHz LPF
IC312 (1/2) BUFFER/APERTURE AMP
REC R
IC331 (1/2) BUFFER
AFM L
AFM R
IC329 (1/2)
MONO
ST
MIX2
IC332
PCM
AFM
Q351
MIX1
MIX2
IC333
Q338 ATT
Q337 ATT
MAKER MUTE (Q345)
Q352
+16.5dB
IC317 OUTPUT SELECT
MUTE
VCA
OUTPUT SELECT/ MUTE CONTROL
REG
+4V
MONI 1
MONI 2
C/C
A MUTE
S/S
IC316 AUDIO OUT AMP
Q310 MUTE
Q311 MUTE
Q339 BUFFER
Q340 MUTE
Q341 MUTE
Q342 MUTE
Q312,313 MUTE-OFF DELAY
Q314 POWER-OFF MUTE
D316
A MUTE
SP ON/OFF
CN312
PH OUT R
PH OUT L
SP ON/OFF
PH VCA
CN862
RV861 PHONE LEVEL
J862 PHONE
HJ-5P BOARD (1/3)
(See Page 191)
LL-1P BOARD (See Page 191)
LEVEL METER L
IC325
ROOT COMPRESS
RV304 LEVEL METER L
IC327 METER AMP
RV305 LEVEL METER R
CN311
LEVEL OUT L
LEVEL OUT R
LEVEL METER R
LR-11P BOARD
(See Page 191)
IC319 EXPANTION PORT
MIX 1
MIX 2
RESET
STB
CLK
DATA
CN306
PCM CS
FADER CONT
PCM ACT
PCM S/P STB
MARKER CS
CN307
SCK
DATA TO MASTER
DATA TO SLV
SYSTEM RESET
DL SMPL
PCM INH
AF REC
SYSTEM SYNC
FE RS
FE RA
SYSTEM CONTROL (SS-95P BOARD)
SP/LP
MONO/STE DET
VP PB MODE
CN307
SYSTEM CONTROL (SS-95P BOARD)
IC231 LINE/PHONE SW
LINE OUT
PHONE OUT
SP ATT
MUTE
SP ON/OFF
Q234 ATT
Q236(1/2) MUTE
IC232 SPEAKER AMP
VCC
Q235(1/2) MUTE
Q233
SP OUT
CN322
W314
CN231
Q231,232
AUDIO 8V (CN231 ①)
(See Page 197)
AS-22P BOARD (1/2)
REC/PB (IC319 ⑧)
D339
Q316
MONI 1
MONI 2
Q319
D336
PB MT/TH
CN225
CN228
SS-95P BOARD
(See Page 170)
CN801
SUB
MAIN
STEREO
S801 AUDIO MONITOR
LI-12P BOARD
(See Page 182)

3-13. AFM AUDIO BLOCK DIAGRAM


AS-22P BOARD
(See Page 197)
VIDEO(1)
(VI-100 BOARD)
PB RF
REC AFM RF
CN701
Q716
BUFFER
Y TRAP
Q729,730
LIMITER
FL701
1.5MHz BPF
Q717,718
PB RF AMP
Q713,714
MIX AMP
RV713
REC AFM
REC AFM RF (1.5MHz)
Q733
AMP
LPF
Q706
DOC LEVEL SWITCH
LP/SP (Q707)
RF SWP (CN702①)
DROP OUT DETECTOR
PG DUBLER
PB AMP
LIMITER
PHASE COMP (FM DEMOD)
REC ON
VCO (FM MODE)
V-I CONV
HOLD 1
HOLD 2
DO
PB
REC
LPF
LIMITER
REC L
REC L+R
EMPHASIS 2
WEIGHTING FILTER
MOA
DET
VCA
EMPHASIS 1
MUTE DET
MUTE
5dB AMP
AGC AMP
AGC DET
IN1
IN2
IN3
PB L+R/REC L
PB L+R/REC L+R
IC701
AFM PROCESS(L/L+R)
REG 4.2V
4.2V
REC/PB
PB/REC (CN702②)
L MUTE (Q711)
INPUT SEL (CN703⑥)
Q705
CAM/LINE SWITCH
AGC TIME CONSTANT
RV701
1.5MHz CARRIER
RV702
1.5MHz DEVIATION
SP/LP SWITCH
Q702
IC708
PLL
1/2 13
PHASE COMP
I/N
I/M
X'TAL OSC
X701
AMP
REC ON
REC/PB
PB/REC (CN702②)
Q703
SP/LP (CN703②)
REC AFM RF (1.7MHz)
RV703
1.7MHz CARRIER
Q704
SP/LP SWITCH
RV704
1.7MHz DEVIATION
IC702
AFM PROCESS(R/L-R)
Q732
AMP
Q715
1.7MHz MUTE
1.7MHz CAR ON/OFF (CN702⑩)
RV714
1.7MHz LEVEL
1.7MHz BPF
Q719,720
PB RF AMP
REC L-R
REC R
4.2V
REG 4.2V
PB/REC (CN702②)
REC/PB
R MUTE (Q712)
Q708
CAM/LINE SWITCH
INPUT SEL (CN703⑥)
AGC TIME CONSTANT
Q709
DOC LEVEL SWITCH
LP/SP (Q707)
RF SWP (CN702①)
PB L-R/REC L-R
PB L-R/REC R
Q721,723~727
1.7MHz CARRIER DETECT

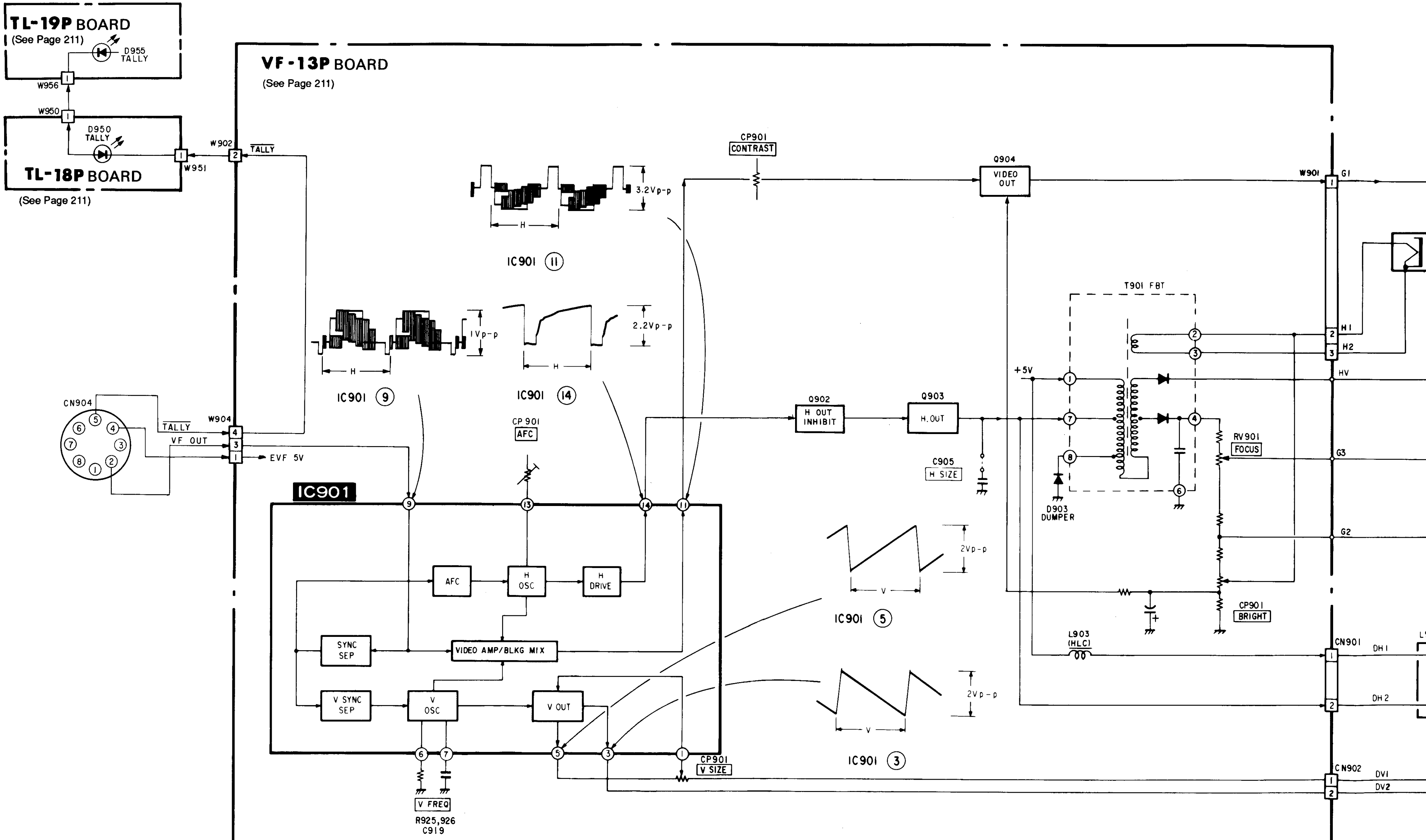
AS-22P BOARD

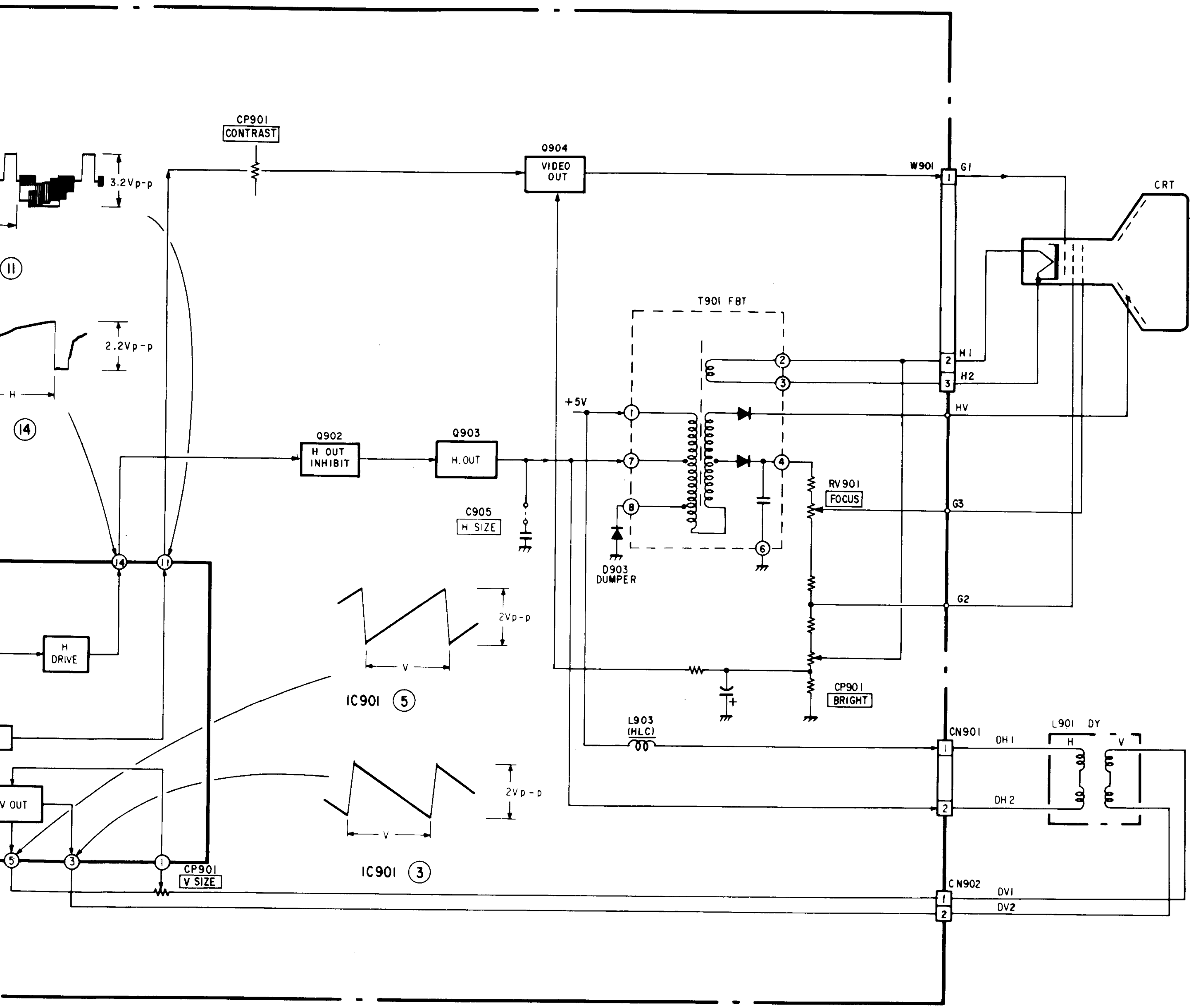
(See Page 197)



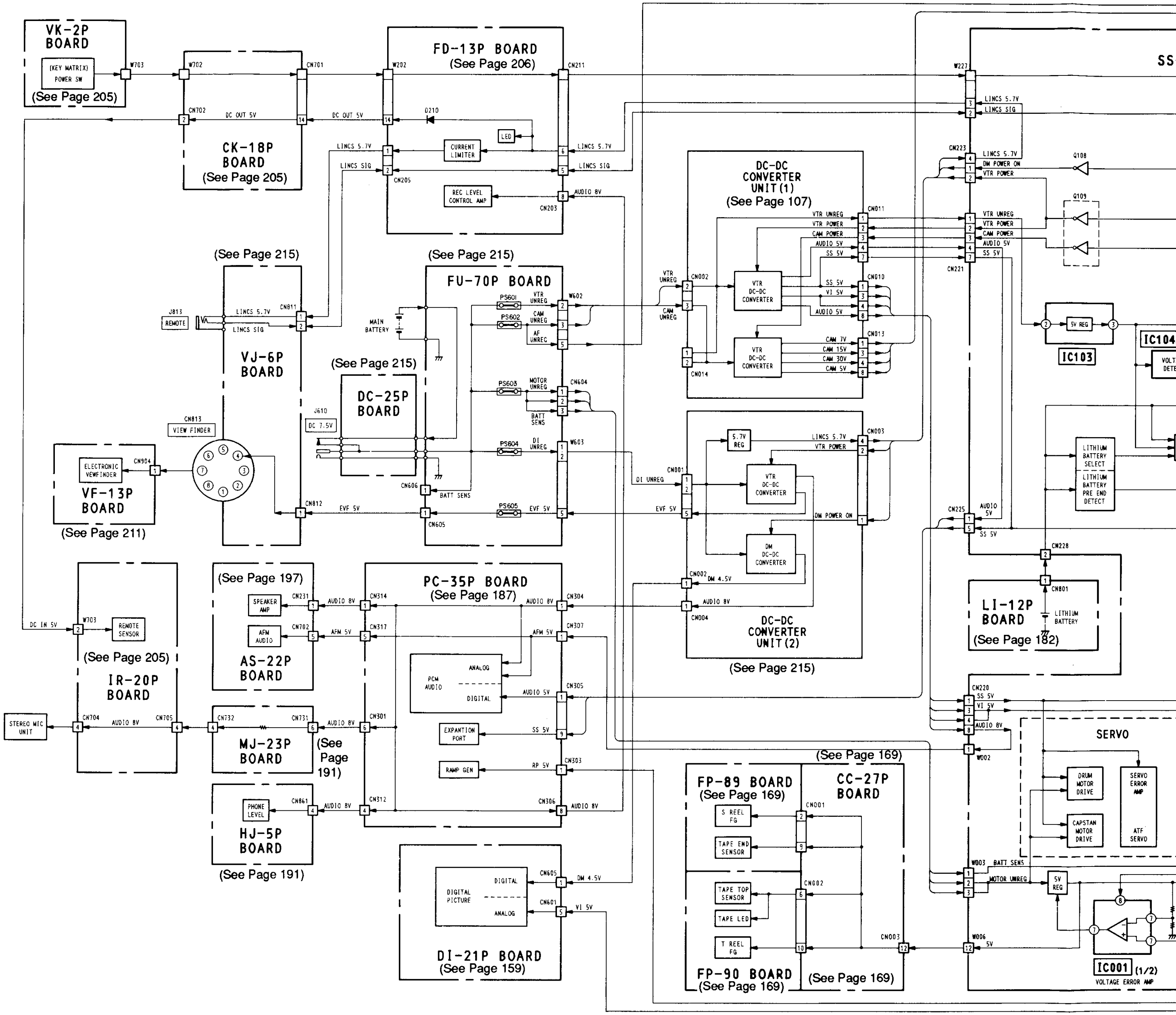
RF
RF
CN701
Q716
BUFFER
Y TRAP
Q729,730
LIMITER
FL701
1.5MHz BPF
Q717,718
PB RF AMP
Q713,714
MIX AMP
REC AFM RF (1.5MHz)
RV713
REC AFM
REC AFM RF (1.7MHz)
LP/SP (Q707)
Q706
DOC LEVEL SWITCH
RF SWP (CN702①)
PG DUBLER
DROP OUT DETECTOR
PB AMP
LIMITER
PHASE COMP (FM DEMOD)
HOLD 1
HOLD 2
LPF
DO
PB
REC
REC ON
VCO (FM MODE)
V-I CONV
Q733
AMP
IC701
AFM PROCESS(L/L+R)
EMPHASIS 2
WEIGHTING FILTER
MOA
DET
VCA
EMPHASIS 1
MUTE
5dB AMP
MUTE DET
AGC AMP
AGC DET
MIX
IN1
IN2
IN3
PB L+R/EEL
PB L+R/REC L
PB L+R/REC L+R
REC L
REC L+R
REG 4.2V
4.2V
REC/PB
PB/REC (CN702②)
L MUTE (Q711)
INPUT SEL (CN703⑥)
RV702
1.5MHz DEVIATION
RV701
1.5MHz CARRIER
SP/LP SWITCH
Q702
AGC TIME CONSTANT
Q705
CAM/LINE SWITCH
CAM/LINE (CN703④)
IC708
PLL
1/2 13
PHASE COMP
1/N
1/M
X'TAL OSC
X701
PB/REC (CN702②)
REC/PB
Q703
SP/LP (CN703②)
RV703
1.7MHz CARRIER
Q704
SP/LP SWITCH
RV704
1.7MHz DEVIATION
Q708
CAM/LINE SWITCH
IC702
AFM PROCESS(R/L-R)
Q732
RV714
1.7MHz LEVEL
Q715
1.7MHz MUTE
1.7MHz CAR ON/OFF (CN702⑩)
1.7MHz BPF
Q719,720
PB RF AMP
REC L-R
REC R
R MUTE (Q712)
Q709
DOC LEVEL SWITCH
LP/SP (Q707)
RF SWP (CN702①)
PB L-R/REC L-R
PB L-R/REC R
PB L-R
Q721,723~727
1.7MHz CARRIER DETECT
PB L+R
IC704 (1/2)
PB/REC (CN702②)
REC/PB (Q728)
IC703 (1/2)
INVERTER
IC703 (1/2)
L+R MATRIX
RV706 L+R
L
R
IC705 (1/2)
L MATRIX
IC705 (1/2)
INVERTER
RV710
L MATRIX
IC704 (1/2)
PB MT/TH (Q710)
PB MT/TH (CN702⑨)
RV712
R MATRIX
IC706 (1/2)
R MATRIX
IC707 (1/2)
PB MT/TH (CN702⑨)
PB MT/TH (Q710)
CN702
AFM L OUT
AFM R OUT
PCM AUDIO (PC-35P BOARD)
CN703
AFM L IN
AFM R IN
AFM MONO IN
PCM AUDIO (PC-35P BOARD)
IC706 (1/2)
L-R MATRIX
RV707
L-R
REC L-R
IC707 (1/2)
REC/PB (Q728)
PB/REC (CN702②)
1.7MHz CAR ON/OFF
PB MT/TH
Q710
PB MT/TH
Q712
R MUTE
Q711
L MUTE
PB/REC
REC/PB
Q728
RF SWP
INPUT SEL
CAM/LINE
SP/LP
LP/SP
Q707
Q701
2.5V REG
2.5V
AFM 5V
1.7MHz CAR ON/OFF
PB MT/TH
MONO/STEREO DET
MARKER MUTE
PB/REC
PCM AUDIO (PC-35P BOARD)
INPUT SEL
CAM/LINE
SP/LP
RF SWP
SERVO (SS-95P BOARD)

3-14. VIEW FINDER BLOCK DIAGRAM

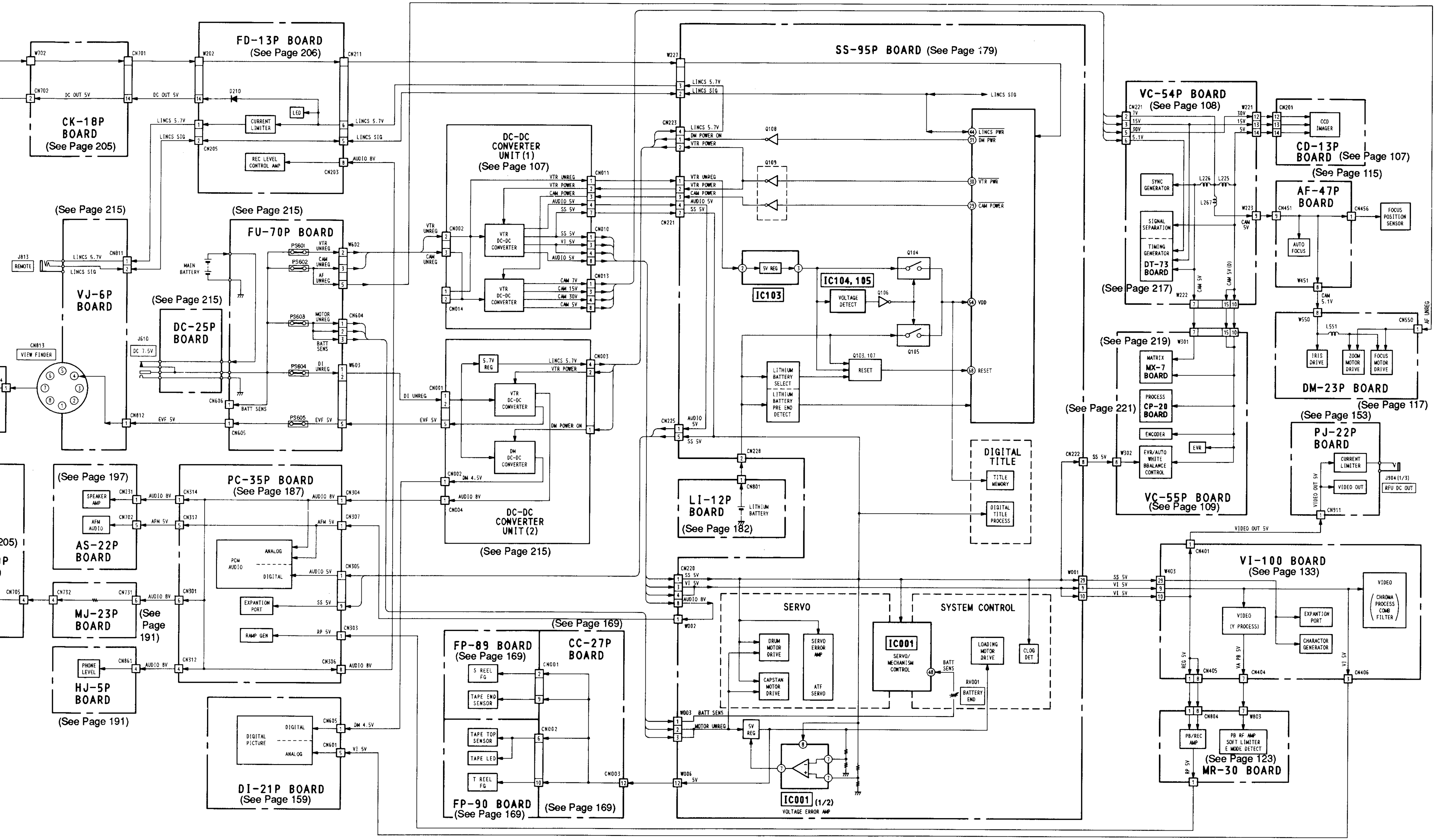

TL-19P BOARD
(See Page 211)
D955
TALLY
W956
W950
D950
TALLY
TL-18P BOARD
(See Page 211)
W951
W902
TALLY
VF-13P BOARD
(See Page 211)
CP901
CONTRAST
Q904
VIDEO OUT
W901
G1
3.2Vp-p
H
IC901 ⑪
T901 FBT
1Vp-p
H
IC901 ⑨
2.2Vp-p
H
IC901 ⑭
H1
H2
HV
+5V
CN904
TALLY
VF OUT
W904
EVF 5V
CP 901
AFC
Q902
H OUT INHIBIT
Q903
H.OUT
C905
H SIZE
D903
DUMPER
RV901
FOCUS
G3
G2
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/BLKG MIX
V SYNC SEP
V OSC
V OUT
2Vp-p
V
IC901 ⑤
2Vp-p
V
IC901 ③
CP901
BRIGHT
L903
(HLC)
CN901
DH1
DH2
CP901
V SIZE
CN902
DV1
DV2
V FREQ
R925,926
C919

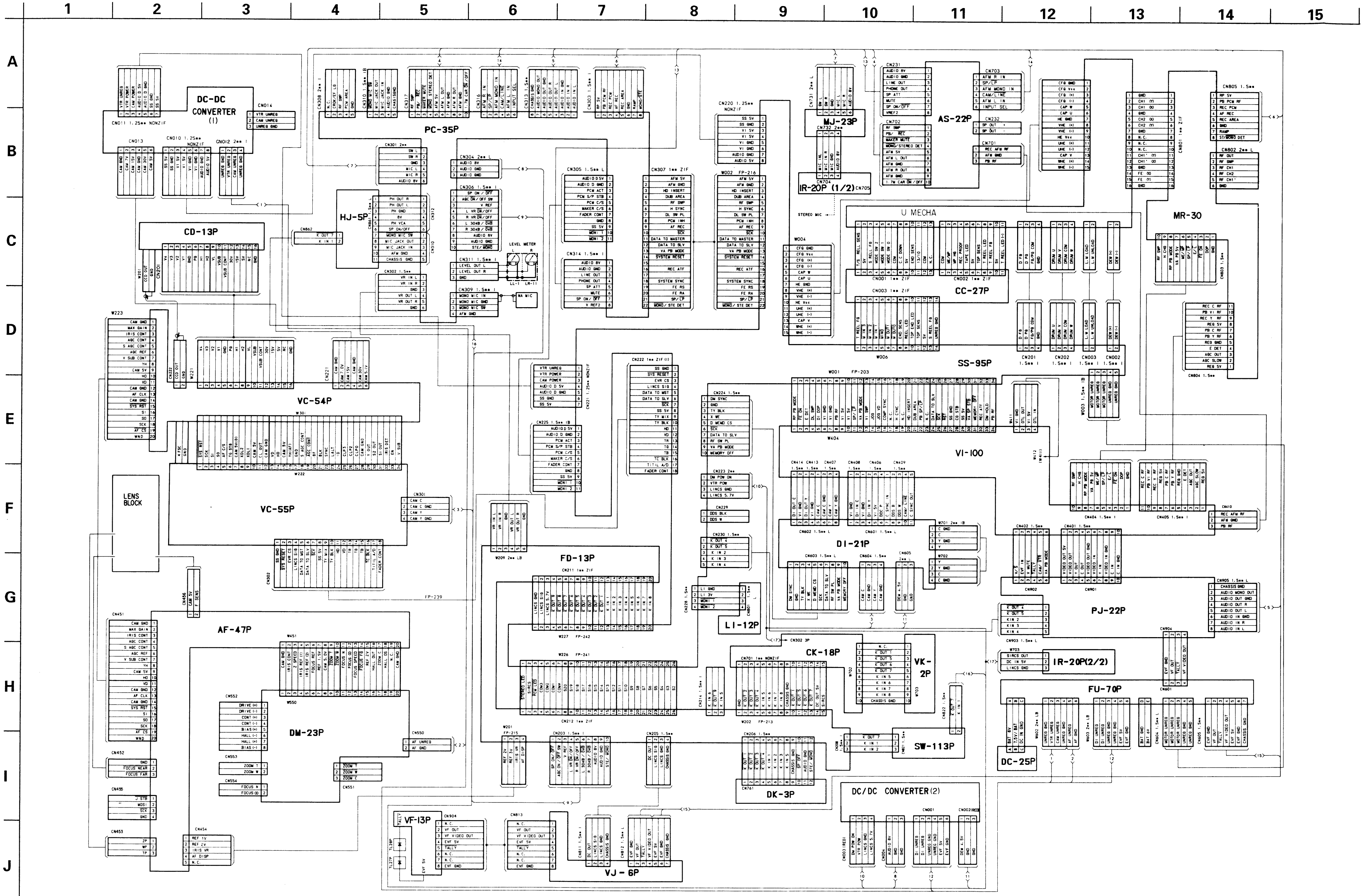

CP901
CONTRAST
Q904
VIDEO OUT
W901
G1
CRT
3.2Vp-p
11
2.2Vp-p
H
14
T901 FBT
H1
H2
HV
+5V
Q902
H OUT INHIBIT
Q903
H. OUT
C905
H SIZE
D903
DUMPER
RV901
FOCUS
G3
G2
H DRIVE
2Vp-p
V
IC901 5
CP901
BRIGHT
L903
(HLC)
CN901
DH1
DH2
L901 DY
H
V
V OUT
2Vp-p
V
IC901 3
CP901
V SIZE
CN902
DV1
DV2

3-15. POWER BLOCK DIAGRAM



VK-2P BOARD
(KEY MATRIX) POWER SW
(See Page 205)
W703
W702
CK-18P BOARD
(See Page 205)
CN701
CN702
DC OUT 5V
FD-13P BOARD
(See Page 206)
W202
CN211
D210
LED
CURRENT LIMITER
REC LEVEL CONTROL AMP
LINCS 5.7V
LINCS SIG
AUDIO 8V
CN205
CN203
(See Page 215)
VJ-6P BOARD
J813
REMOTE
CN811
CN813
VIEW FINDER
CN812
EVF 5V
ELECTRONIC VIEWFINDER
CN904
VF-13P BOARD
(See Page 211)
FU-70P BOARD
MAIN BATTERY
PS601
PS602
PS603
PS604
PS605
VTR UNREG
CAM UNREG
AF UNREG
MOTOR UNREG
BATT SENS
DI UNREG
W602
W603
CN604
CN605
CN606
DC-25P BOARD
J610
DC 7.5V
DC-DC CONVERTER UNIT (1)
(See Page 107)
CN002
CN014
CN010
CN011
CN013
VTR DC-DC CONVERTER
VTR POWER
CAM POWER
AUDIO 5V
SS 5V
VI 5V
CAM 7V
CAM 15V
CAM 30V
CAM 5V
DC-DC CONVERTER UNIT (2)
(See Page 215)
CN001
CN003
CN004
5.7V REG
DM DC-DC CONVERTER
DM POWER ON
DM 4.5V
DC IN 5V
IR-20P BOARD
(See Page 205)
REMOTE SENSOR
CN704
CN705
STEREO MIC UNIT
AS-22P BOARD
(See Page 197)
SPEAKER AMP
AFM AUDIO
CN231
CN702
AFM 5V
PC-35P BOARD
(See Page 187)
CN314
CN317
CN301
CN312
CN304
CN307
CN305
CN303
CN306
PCM AUDIO
ANALOG
DIGITAL
EXPANTION PORT
RAMP GEN
RP 5V
MJ-23P BOARD
CN732
CN731
(See Page 191)
HJ-5P BOARD
PHONE LEVEL
CN861
DI-21P BOARD
(See Page 159)
DIGITAL PICTURE
CN605
CN601
FP-89 BOARD
(See Page 169)
S REEL FG
TAPE END SENSOR
TAPE TOP SENSOR
TAPE LED
T REEL FG
FP-90 BOARD
CC-27P BOARD
(See Page 169)
CN001
CN002
CN003
SS
W227
CN223
CN221
CN225
CN228
Q108
Q109
DM POWER ON
5V REG
IC103
IC104
VOLT DETE
LITHIUM BATTERY SELECT
LITHIUM BATTERY PRE END DETECT
LI-12P BOARD
(See Page 182)
CN801
LITHIUM BATTERY
CN220
W002
SERVO
DRUM MOTOR DRIVE
CAPSTAN MOTOR DRIVE
SERVO ERROR AMP
ATF SERVO
W003
W006
BATT SENS
MOTOR UNREG
5V REG
IC001 (1/2)
VOLTAGE ERROR AMP


CK-18P BOARD
(See Page 205)
FD-13P BOARD
(See Page 206)
CURRENT LIMITER
REC LEVEL CONTROL AMP
LED
D210
DC OUT 5V
LINCS 5.7V
LINCS SIG
AUDIO 8V
VJ-6P BOARD
(See Page 215)
J813 REMOTE
CN813 VIEW FINDER
EVF 5V
FU-70P BOARD
(See Page 215)
MAIN BATTERY
VTR UNREG
CAM UNREG
AF UNREG
MOTOR UNREG
BATT SENS
DI UNREG
DC-25P BOARD
(See Page 215)
J610 DC 7.5V
DC-DC CONVERTER UNIT (1)
(See Page 107)
VTR DC-DC CONVERTER
VTR POWER
CAM POWER
AUDIO 5V
SS 5V
VI 5V
CAM 7V
CAM 15V
CAM 30V
CAM 5V
DC-DC CONVERTER UNIT (2)
(See Page 215)
5.7V REG
DM DC-DC CONVERTER
DM POWER ON
DM 4.5V
SS-95P BOARD (See Page 179)
Q108
Q109
LINCS PWR
DM PWR
VTR PWR
CAM POWER
5V REG
IC103
IC104, 105
VOLTAGE DETECT
Q104
Q105
Q106
Q103, 107
RESET
VDD
LITHIUM BATTERY SELECT
LITHIUM BATTERY PRE END DETECT
DIGITAL TITLE
TITLE MEMORY
DIGITAL TITLE PROCESS
LI-12P BOARD
(See Page 182)
LITHIUM BATTERY
SERVO
DRUM MOTOR DRIVE
CAPSTAN MOTOR DRIVE
SERVO ERROR AMP
ATF SERVO
SYSTEM CONTROL
IC001
SERVO/MECHANISM CONTROL
LOADING MOTOR DRIVE
CLOG DET
BATT SENS
RV001 BATTERY END
5V REG
MOTOR UNREG
IC001 (1/2)
VOLTAGE ERROR AMP
VC-54P BOARD
(See Page 108)
SYNC GENERATOR
SIGNAL SEPARATION
TIMING GENERATOR
DT-73 BOARD
(See Page 217)
L226
L225
L267
CD-13P BOARD (See Page 107)
CCD IMAGER
AF-47P BOARD
(See Page 115)
AUTO FOCUS
FOCUS POSITION SENSOR
DM-23P BOARD
(See Page 117)
IRIS DRIVE
ZOOM MOTOR DRIVE
FOCUS MOTOR DRIVE
L551
AF UNREG
VC-55P BOARD
(See Page 109)
(See Page 219)
MATRIX MX-7 BOARD
(See Page 221)
PROCESS CP-20 BOARD
ENCODER
EVR
EVR/AUTO WHITE BBALANCE CONTROL
PJ-22P BOARD
(See Page 153)
CURRENT LIMITER
VIDEO OUT
J904 (1/3) RFU DC OUT
VIDEO OUT 5V
VI-100 BOARD
(See Page 133)
VIDEO (Y PROCESS)
VIDEO (CHROMA PROCESS COMB FILTER)
EXPANTION PORT
CHARACTOR GENERATOR
REG 5V
VA PB 5V
VI 5V
MR-30 BOARD
(See Page 123)
PB/REC AMP
PB RF AMP SOFT LIMITER E MODE DETECT
RP 5V
PC-35P BOARD
(See Page 187)
PCM AUDIO
ANALOG
DIGITAL
EXPANTION PORT
RAMP GEN
AUDIO 8V
AFM 5V
AUDIO 5V
SS 5V
RP 5V
AS-22P BOARD
(See Page 197)
SPEAKER AMP
AFM AUDIO
MJ-23P BOARD
(See Page 191)
HJ-5P BOARD
(See Page 191)
PHONE LEVEL
DI-21P BOARD
(See Page 159)
DIGITAL PICTURE
DM 4.5V
VI 5V
FP-89 BOARD
(See Page 169)
S REEL FG
TAPE END SENSOR
TAPE TOP SENSOR
TAPE LED
T REEL FG
FP-90 BOARD
(See Page 169)
CC-27P BOARD
(See Page 169)
205)


1
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12
13
14
15
A
B
C
D
E
F
G
H
I
J
DC-DC CONVERTER (1)
PC-35P
MJ-23P
AS-22P
IR-20P (1/2)
STEREO MIC
HJ-5P
CD-13P
LEVEL METER
MA MIC
U MECHA
CC-27P
MR-30
SS-95P
VC-54P
VI-100
LENS BLOCK
VC-55P
FP-239
DI-21P
FD-13P
AF-47P
LI-12P
PJ-22P
CK-18P
VK-2P
IR-20P(2/2)
DM-23P
FU-70P
SW-113P
DC-25P
DK-3P
DC/DC CONVERTER(2)
VF-13P
VJ-6P

4-2. P

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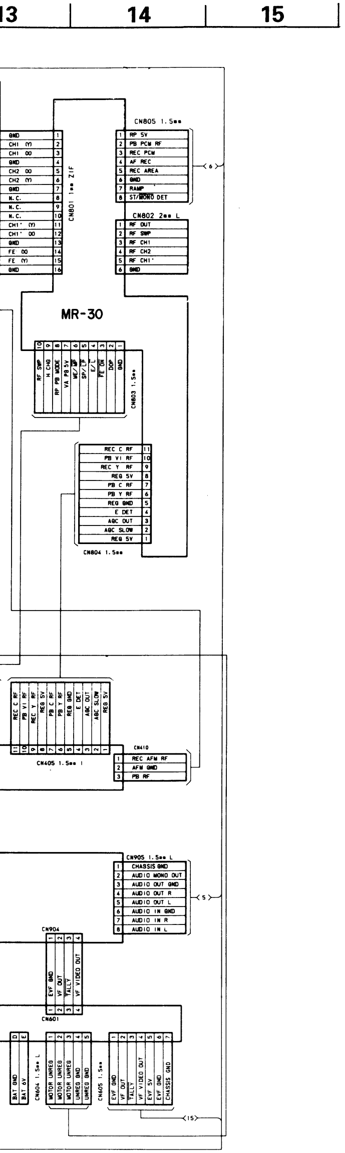


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For printed wiring boards.**
- ● : Through hole.
- ░ : Pattern from the side which enables seeing.
- ▓ : Pattern of the rear side.*
- Circled numbers refer to waveforms.
- The parts with the indication of NOMT are not mounted.

Caution:
Pattern face side: Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated.

- **For schematic diagram.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W or 1/16W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- The parts with the indication of NOMT are not mounted.
- ☐ : adjustment for repair.*
- ━━ : B + Line*
- Circled numbers refer to waveforms.*
- ⇨ : IN/OUT direction of B (+, –) line.*

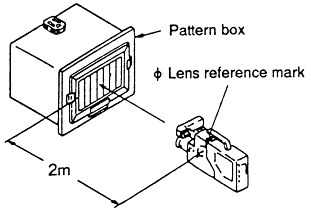
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

* indicated by the color red.

- **For voltage and waveforms. (CAM REC mode)**
- Voltage and waveform measuring conditions:*
  (1) Sample object: Pattern box color bars.*
  (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).*

1. Connection



2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

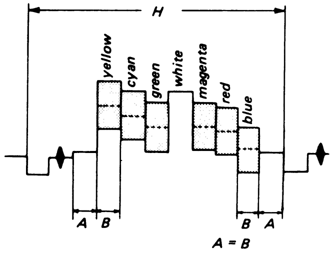


Fig. a Video output waveform of J904 on PJ-21P board.

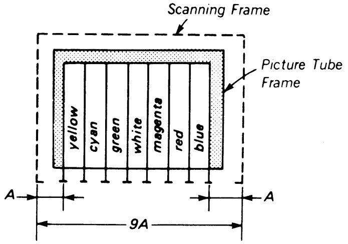


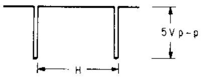
Fig. b Picture of TV monitor screen

- **For voltage and waveforms. (REC/PB mode)**
- Voltages are dc between ground and measurement points.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

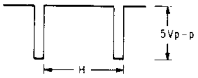
Precautions for replacement of CCD imager block.

- With a pair of IC200 (CCD imager) on the CD-13P complete board and IC005 (corrector ROM) on the DT-73P complete board, it is used a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager corrector ROM cannot be allowed.
- When both a CCD imager and the corrector ROM, replace both the CCD imager and the corrector ROM, when a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
- IC200 (CCD imager) is not mounted on the CD-13P complete board to be supplied as a repair part, and IC005 (corrector ROM) is not mounted on the DT-73P complete board to be supplied as a repair part. When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new ones respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

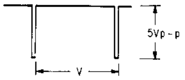
VC-54P BOARD

❶


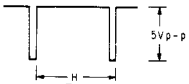
IC261 ① CAM REC

❷


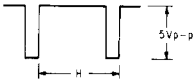
IC261 ㉙ CAM REC

❸


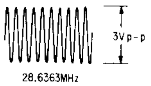
IC261 ㉚ CAM REC

❹


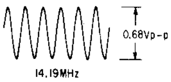
IC261 ㉛ CAM REC

❺


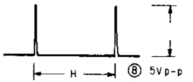
IC261 ㉜ CAM REC

❻


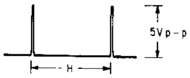
DT-73B ① CAM REC

❼


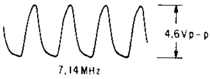
DT-73B ③ CAM REC

❽


DT-73B ⑧, ⑪ CAM REC

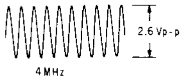
❾


DT-73B ⑨ CAM REC

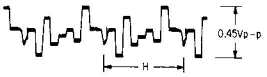
❿


DT-73B ⑮, ⑯ CAM REC

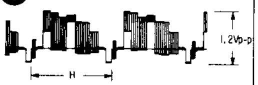
VC-55P BOARD

❶


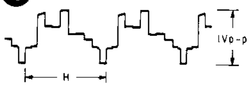
IC301 ㊶ CAM REC

❷


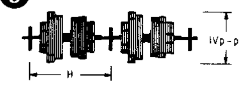
IC304 ① CAM REC

❸


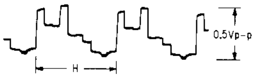
IC304 ⑳ CAM REC

❹


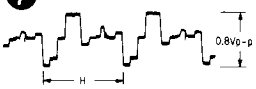
IC304 ㉒ CAM REC

❺


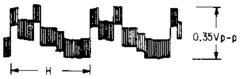
IC304 ㉔ CAM REC

❻


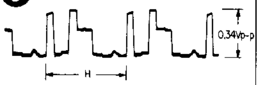
IC304 ㊵ CAM REC

❼


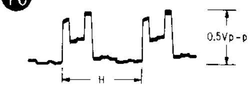
IC304 ㊺ CAM REC

❽


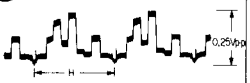
MX-7 ㉒ CAM REC

❾


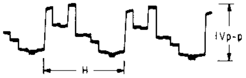
MX-7 ㉓ CAM REC

❿


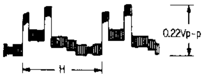
MX-7 ㉕ CAM REC

⓫


MX-7 ㉖ CAM REC

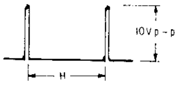
⓬


MX-7 ㉚ CAM REC

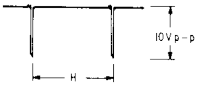
⓭


MX-7 ㊴ CAM REC

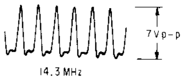
CD-13P BOARD

❶


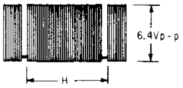
IC200 ①, ② CAM REC

❷


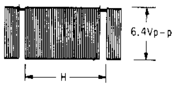
IC200 ③, ⑥ CAM REC

❸


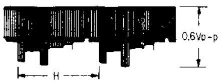
IC200 ⑯ CAM REC

❹


IC200 ⑱ CAM REC

❺


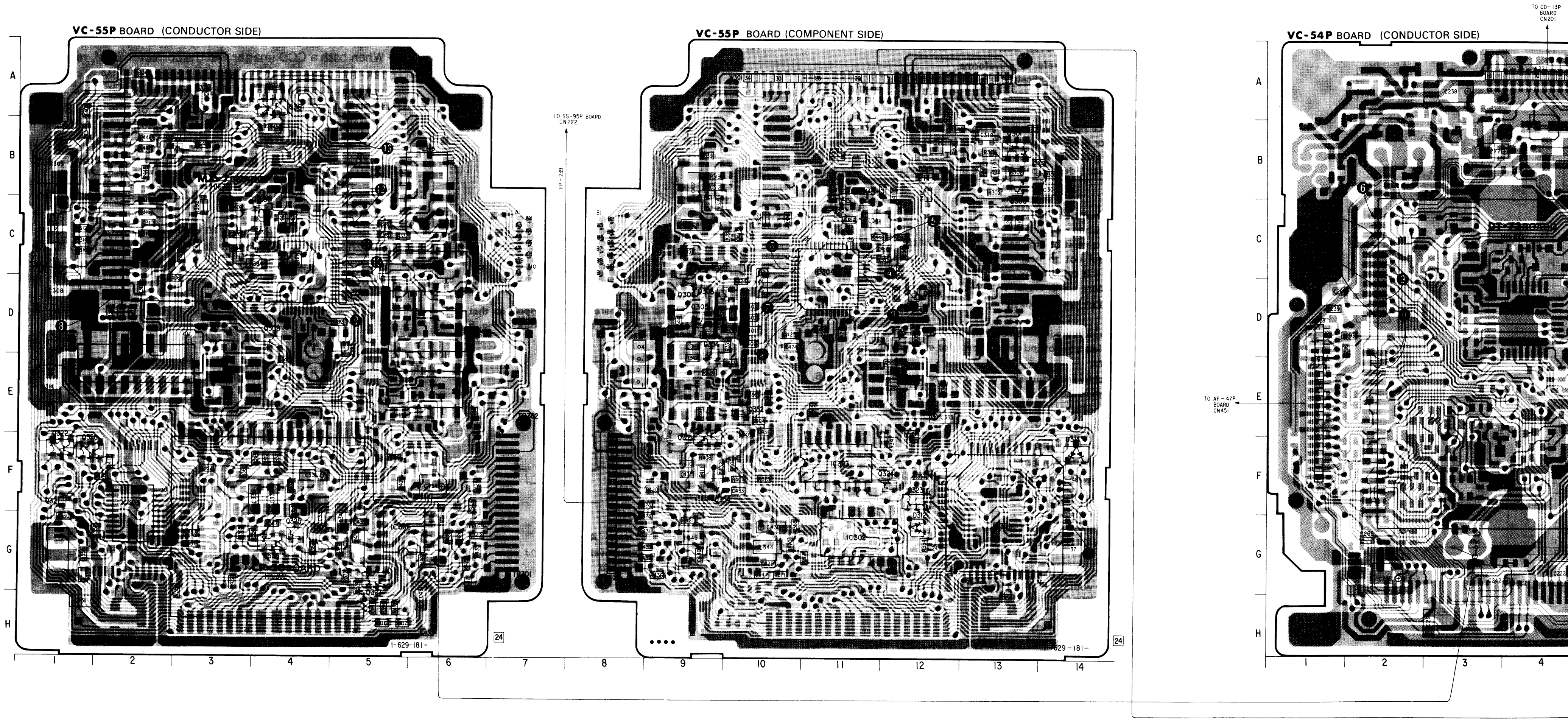
IC200 ⑲ CAM REC

❻


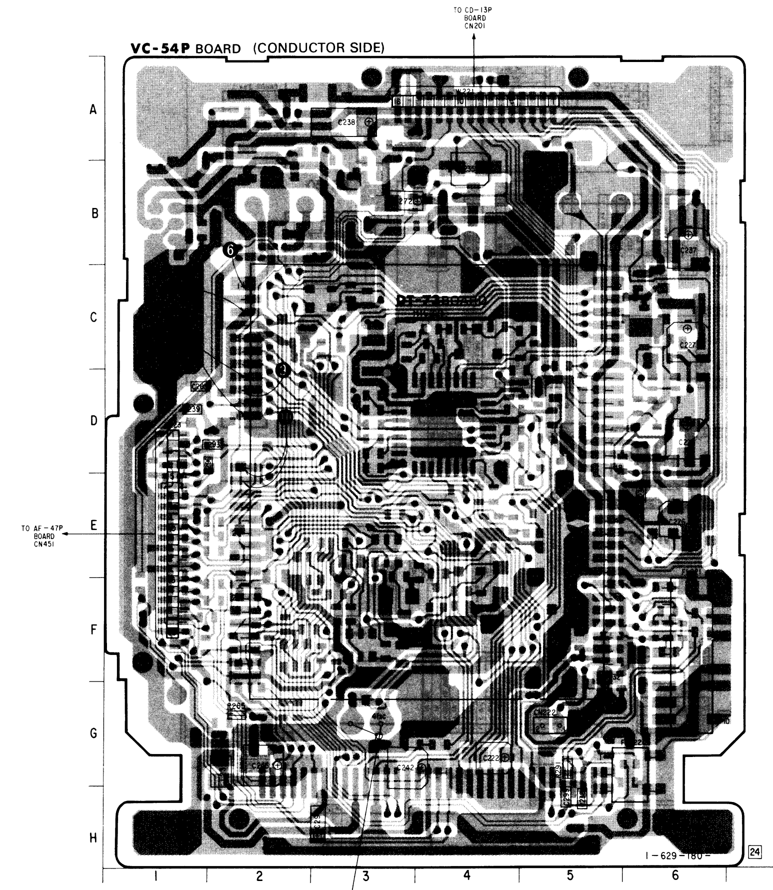
Q202 Ⓢ CAM REC

VC-54P (SYNC, TIMING GENERATOR), VC-55P (CAMERA PROCESS, ENCODER, AUTO WHITE BALANCE), CD-13P (CCD IMAGER) PRINTED WIRNG BOARDS

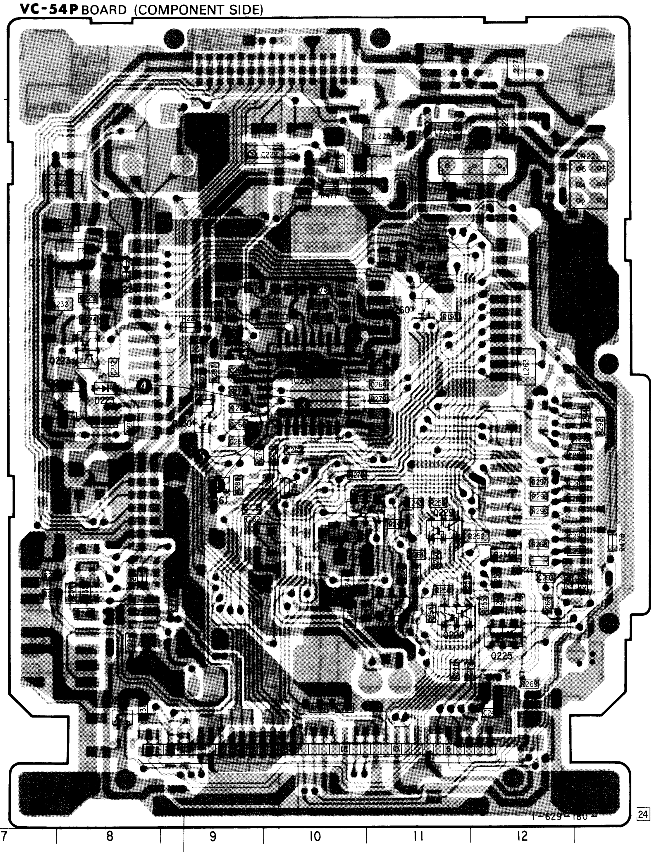
— Ref. No. VC-54P BOARD: 1000 series, VC-55P, DC-13 BOARD: 2000 series —


VC-55P BOARD (CONDUCTOR SIDE)
VC-55P BOARD (COMPONENT SIDE)
VC-54P BOARD (CONDUCTOR SIDE)
TO SS-95P BOARD CN222
FP-239
TO CD-13P BOARD CN201
TO AF-47P BOARD CN451
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
14
1-629-181-
629-181-
24
IC302
C238

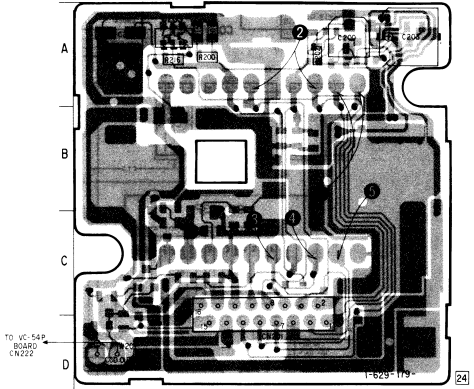
VC-54P BOARD (CONDUCTOR SIDE)


TO CD-13P BOARD CN201
TO AF-47P BOARD CN451
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
C238
W221
1-629-180-
24

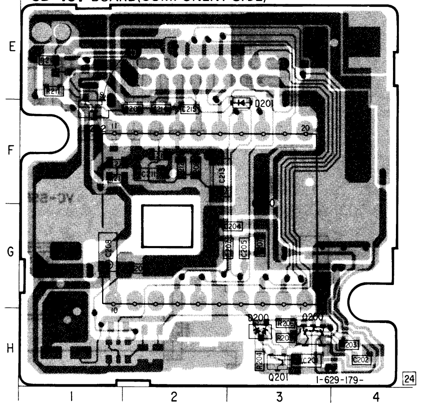
VC-54P BOARD (COMPONENT SIDE)

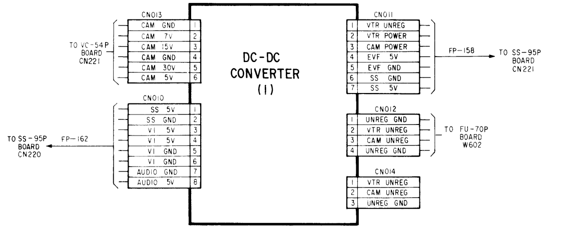

8
9
10
11
12
CN221
L228
L229
Q223
D223
Q225
Q226
R478
1-629-180-
24

CD-13P BOARD (CONDUCTOR SIDE)


A
B
C
D
TO VC-54P BOARD CN222
R200
C209
C208
1-629-179-
24

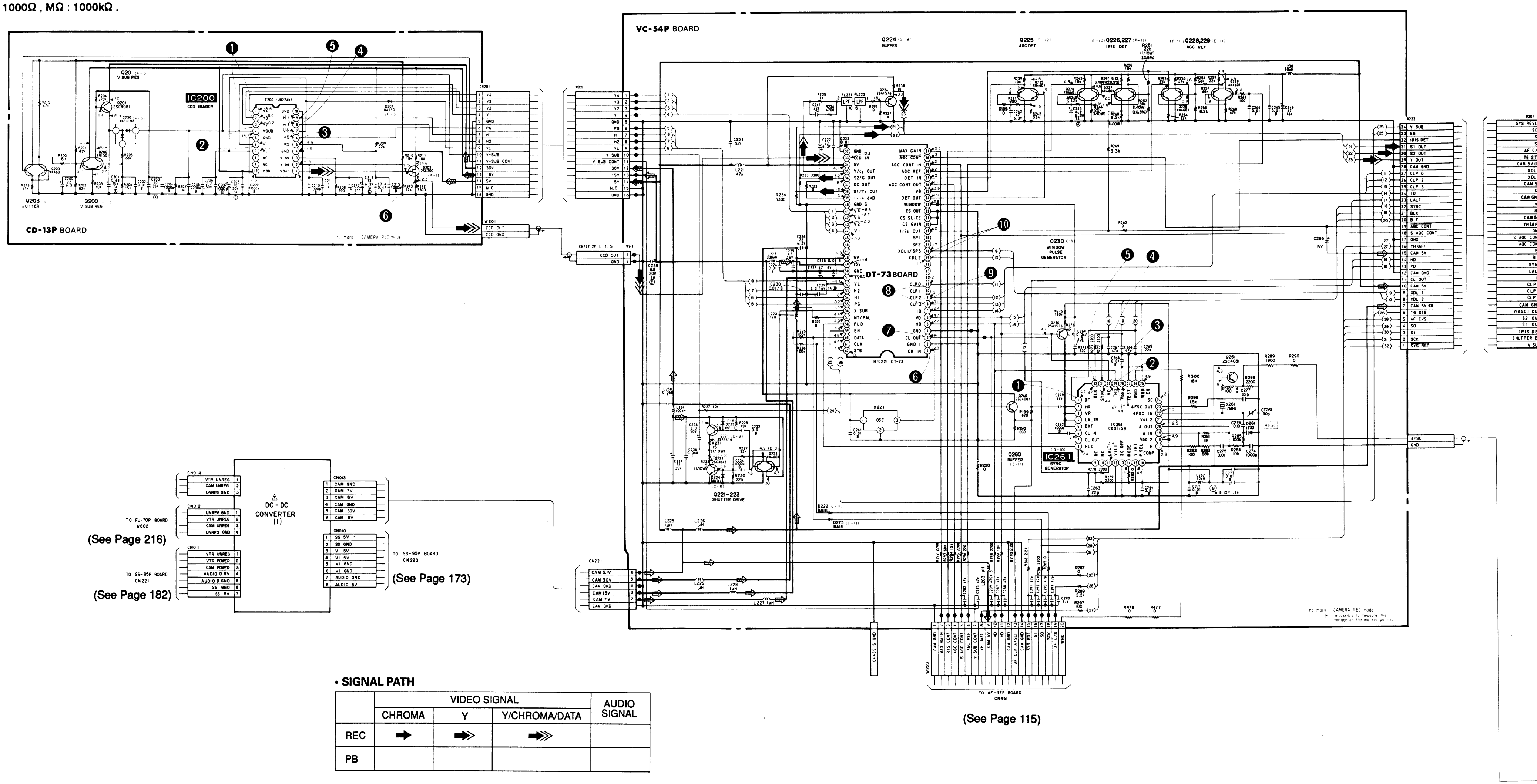
CD-13P BOARD(COMPONENT SIDE)


E
F
G
H
1
2
3
4
Q200
Q201
C202
R204
1-629-179-
24


DC-DC CONVERTER (1)
TO VC-54P BOARD CN221
CN013
1 CAM GND
2 CAM 7V
3 CAM 15V
4 CAM GND
5 CAM 30V
6 CAM 5V
CN010
1 SS 5V
2 SS GND
3 VI 5V
4 VI 5V
5 VI GND
6 VI GND
7 AUDIO GND
8 AUDIO 5V
FP-162
TO SS-95P BOARD CN220
CN011
1 VTR UNREG
2 VTR POWER
3 CAM POWER
4 EVF 5V
5 EVF GND
6 SS GND
7 SS 5V
FP-158
TO SS-95P BOARD CN221
CN012
1 UNREG GND
2 VTR UNREG
3 CAM UNREG
4 UNREG GND
TO FU-70P BOARD W602
CN014
1 VTR UNREG
2 CAM UNREG
3 UNREG GND

- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.
- Chip resistor are 1/16W unless otherwise noted.
  (VC-54 board, VC-55 board)
  kΩ : 1000Ω , MΩ : 1000kΩ .

The HIC, DT-73 board schematic diagram is shown on page 217.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CD-13P BOARD
IC200
CCD IMAGER
Q201 V SUB REG
Q203 BUFFER
Q200 V SUB REG
CN201
W201
CCD OUT
CCD GND
VC-54P BOARD
Q224 BUFFER
Q225 AGC DET
Q226,227 IRIS DET
Q228,229 AGC REF
DT-73 BOARD
HIC221 DT-73
Q230 WINDOW PULSE GENERATOR
IC261 CXD1159
SYNC GENERATOR
Q260 BUFFER
Q261 2SC4081
Q221-223 SHUTTER DRIVE
X221 OSC
W221
CN221
W222
W223
CHASSIS GND
DC-DC CONVERTER (1)
CN014
CN012
CN011
CN013
CN010
TO FU-70P BOARD W602
(See Page 216)
TO SS-95P BOARD CN221
(See Page 182)
TO SS-95P BOARD CN220
(See Page 173)
TO AF-47P BOARD CN451
(See Page 115)
no mark : CAMERA REC mode

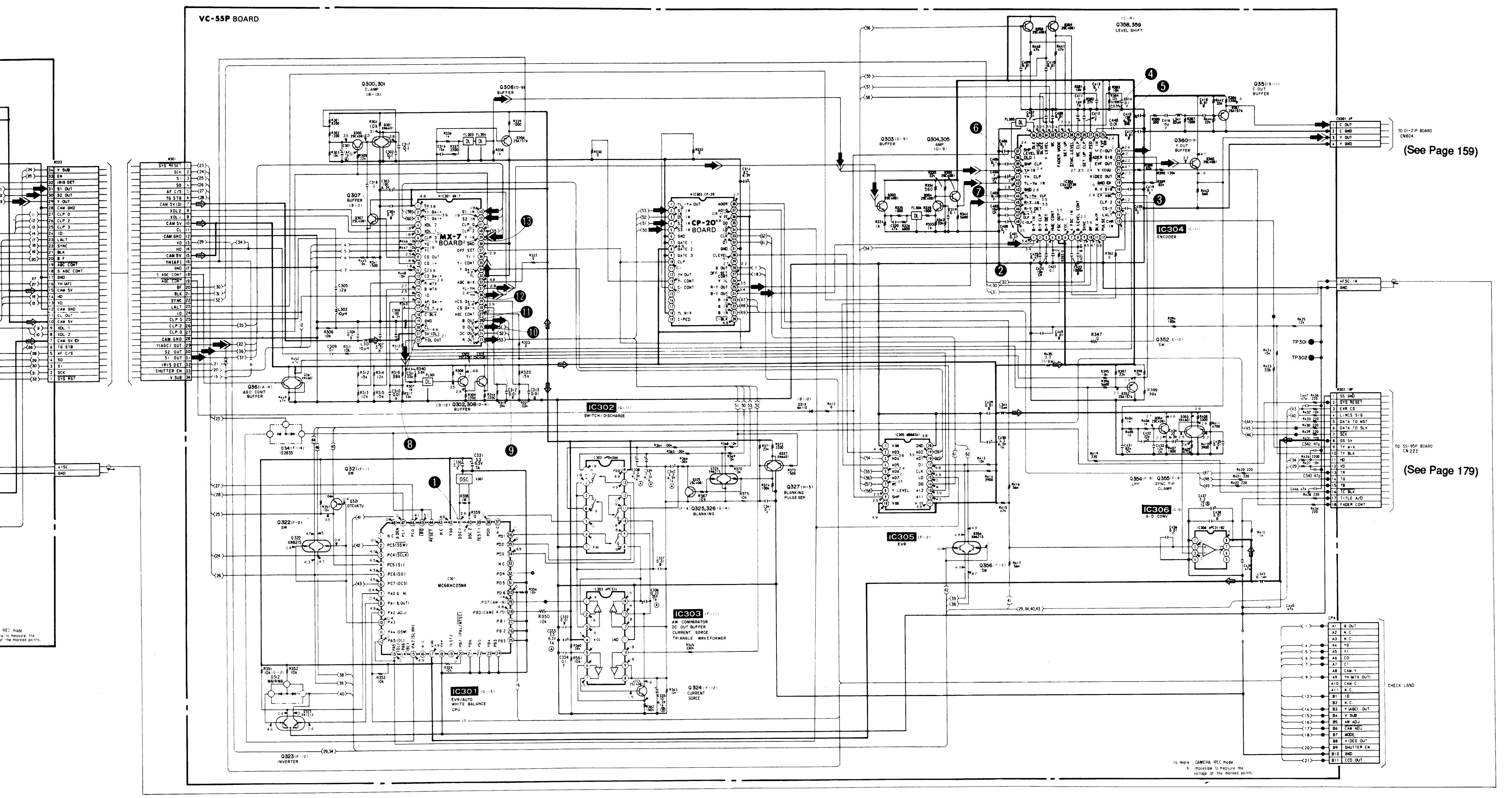
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	⇨	⇛	
PB				

15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31

The HIC, MX-7 board schematic diagram is shown on page 219.

The HIC, CP-20 board schematic diagram is shown on page 221.

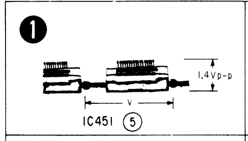


VC-55P BOARD
MX-7 BOARD
CP-20 BOARD
IC301
EVR/AUTO WHITE BALANCE CPU
MC68HC05N4
IC302
SWITCH/DISCHARGE
IC303
AW COMPARATOR
DC OUT BUFFER
CURRENT SORCE
TRIANGLE WAVEFORMER
IC304
ENCODER
IC305
EVR
IC306
A-D CONV
Q300,301 CLAMP
Q306 BUFFER
Q307 BUFFER
Q302,308 BUFFER
Q361 AGC CONT BUFFER
Q321 SW
Q322 SW
Q323 INVERTER
Q324 CURRENT SORCE
Q325,326 BLANKING
Q327 BLANKING PULSE SEP
Q303 BUFFER
Q304,305 AMP
Q358,359 LEVEL SHIFT
Q351 C OUT BUFFER
Q360 Y OUT BUFFER
Q352 SW
Q354 LPF
Q355 SYNC TIP CLAMP
Q356 SW
TP301
TP302
CN301 4P
C OUT
C GND
Y OUT
Y GND
TO DI-21P BOARD CN604
(See Page 159)
CN302 18P
TO SS-95P BOARD CN222
(See Page 179)
4FSC IN
GND
CHECK LAND
SYS RESET
SCK
SI
SO
AF C/S
TG STB
CAM 5V
XDL2
XDL
CL
CAM GND
VD
HD
YH(AF)
S AGC CONT
AGC CONT
BF
BLK
SYNC
LALT
ID
CLP 3
CLP 2
CLP 0
Y(AGC) OUT
S2 OUT
S1 OUT
IRIS DET
SHUTTER EN
V SUB
SS GND
EVR CS
LINCS SIG
DATA TO MST
DATA TO SLV
SS 5V
TY MIX
TY BLK
TR
TG
TB
TC BLK
TITLE A/D
FADER CONT
B OUT
N.C
YO
YI
CO
CI
CAM Y
YH MTX OUT
CAM C
Y(AGC) OUT
Y SUB
AW ADJ
CAM ADJ
MODE
VIDEO OUT
SHUTTER EN
CCD OUT
no mark : CAMERA REC mode
X : impossible to measure the voltage of the marked points.

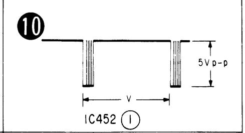
AF-47P (AUTO FOCUS), DM-23P (IRIS/FOCUS/ZOOM MOTOR DRIVE) PRINTED WIRNG BOARDS

— Ref. No. DM-23P BOARD: 1000 series, AF-47P BOARD: 3000 series —

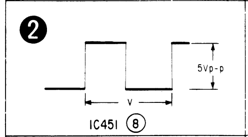
AF-47P BOARD



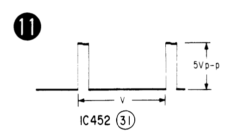
IC451 ⑤



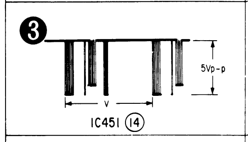
IC452 ①



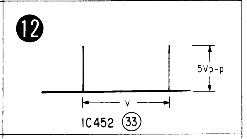
IC451 ⑧



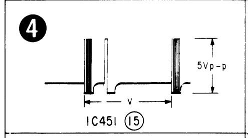
IC452 ㉛



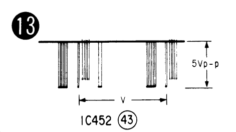
IC451 ⑭



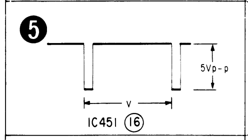
IC452 ㉝



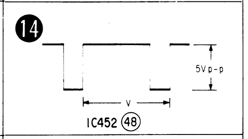
IC451 ⑮



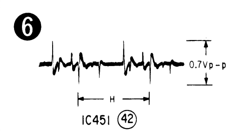
IC452 ㊸



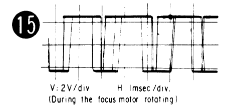
IC451 ⑯



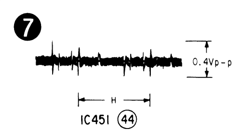
IC452 ㊽



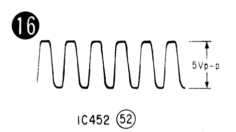
IC451 ㊷



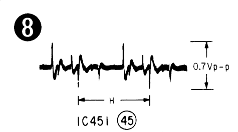
IC452 (51)



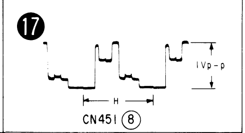
IC451 ㊹



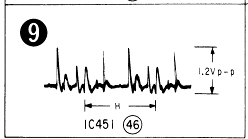
IC452 (52)



IC451 ㊺

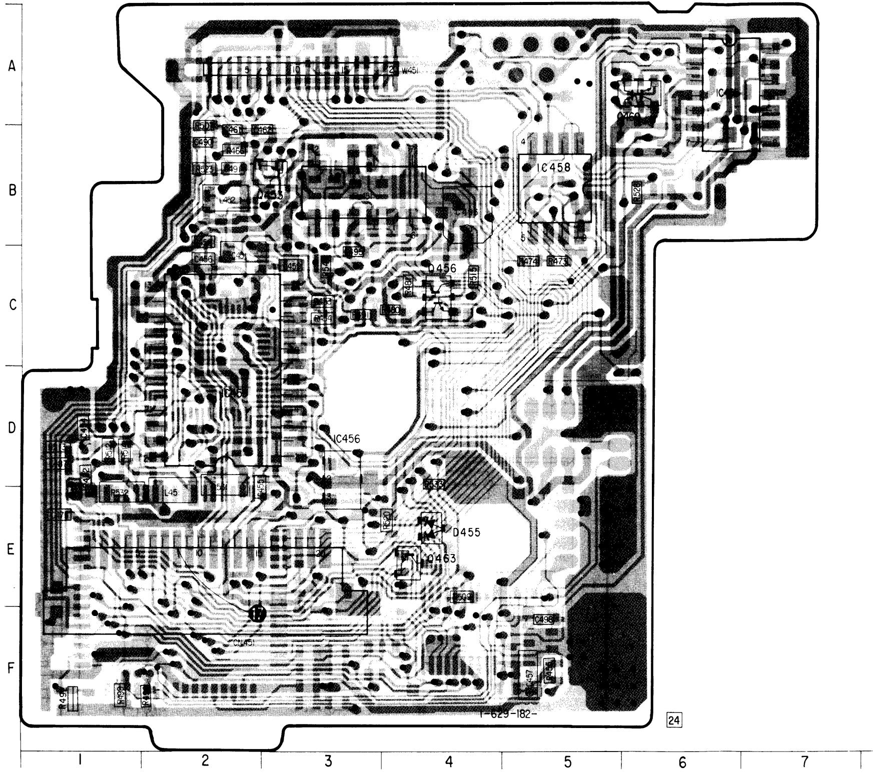


CN451 ⑧

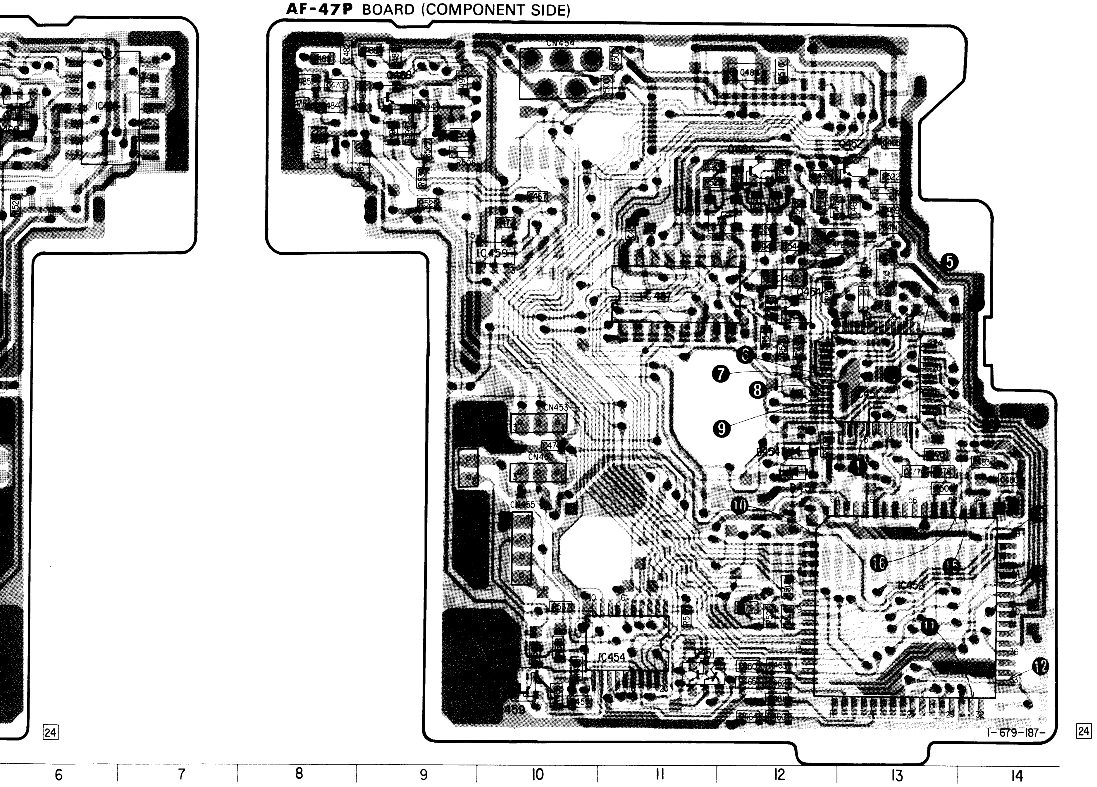


IC451 ㊻

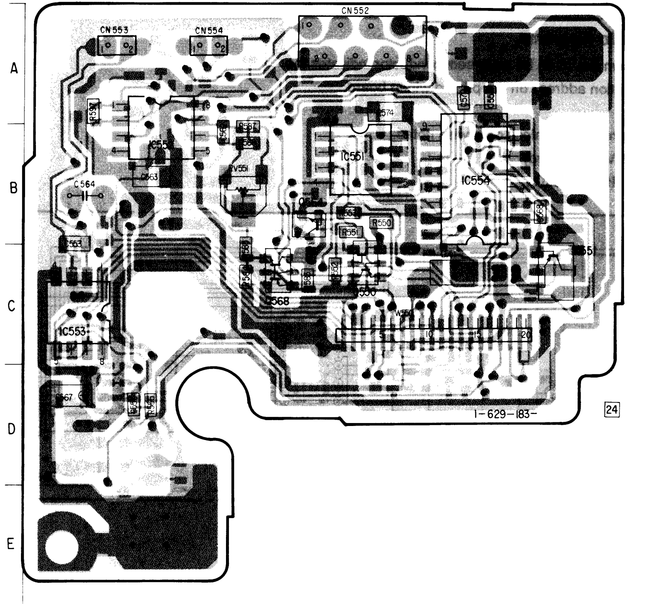
AF-47P BOARD (CONDUCTOR SIDE)


A
B
C
D
E
F
1
2
3
4
5
6
7
W451
IC458
D456
IC456
D455
Q463
CN451
1-629-182-
24

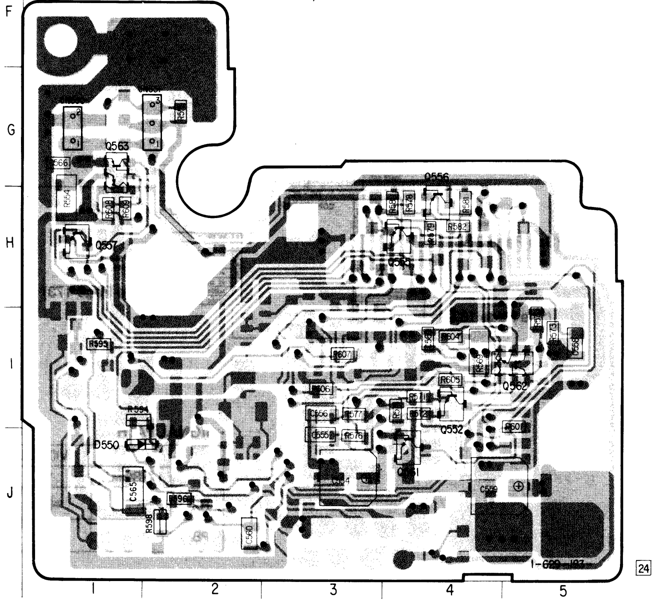
AF-47P BOARD (COMPONENT SIDE)

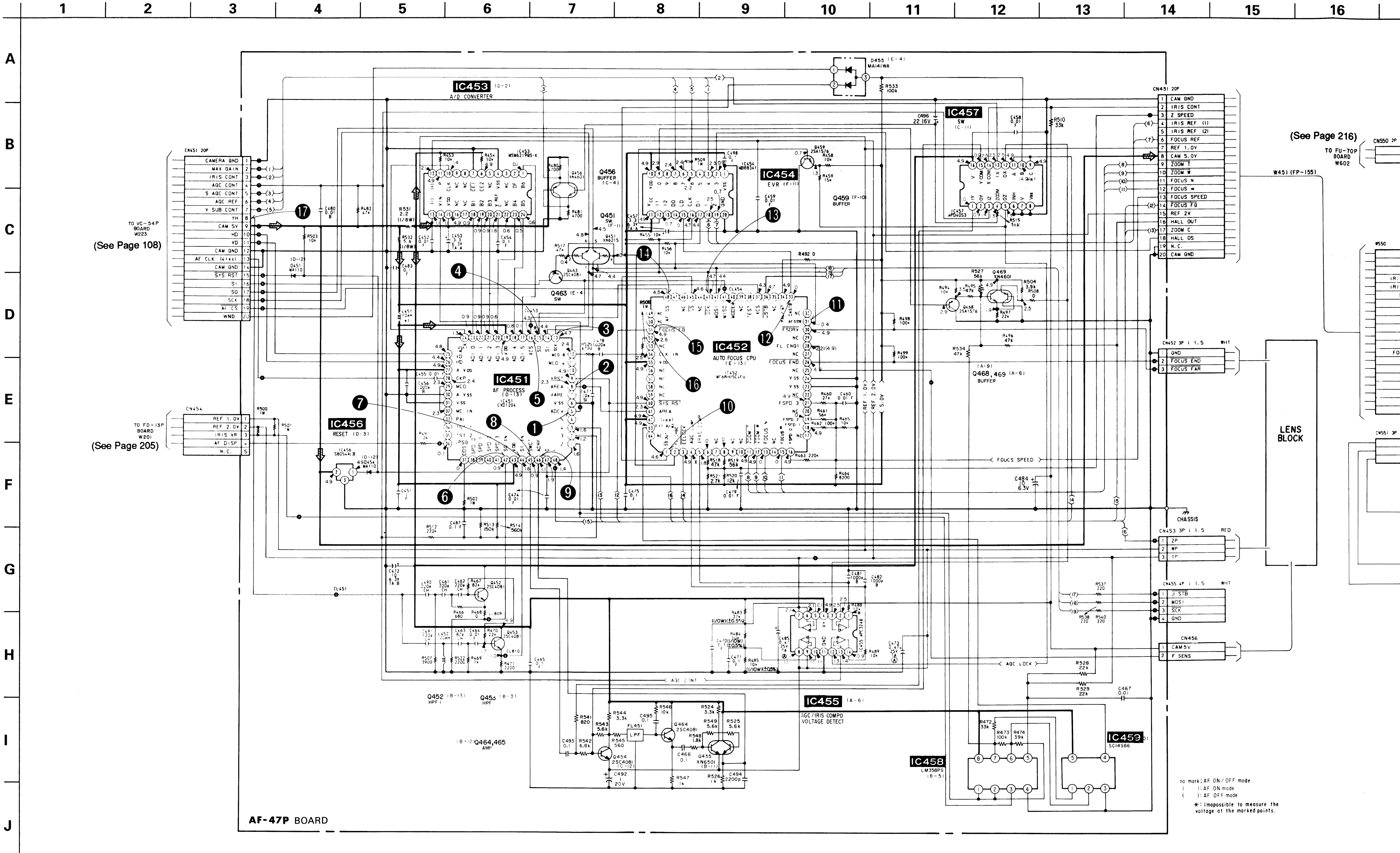

CN454
C489
Q462
Q463
IC459
IC457
Q454
IC451
CN453
CN452
CN455
IC453
IC454
Q451
D454
459
5
6
7
8
9
10
11
12
15
16
1-679-187-
24
24
6
7
8
9
10
11
12
13
14

DM-23P BOARD (COMPONENT SIDE)

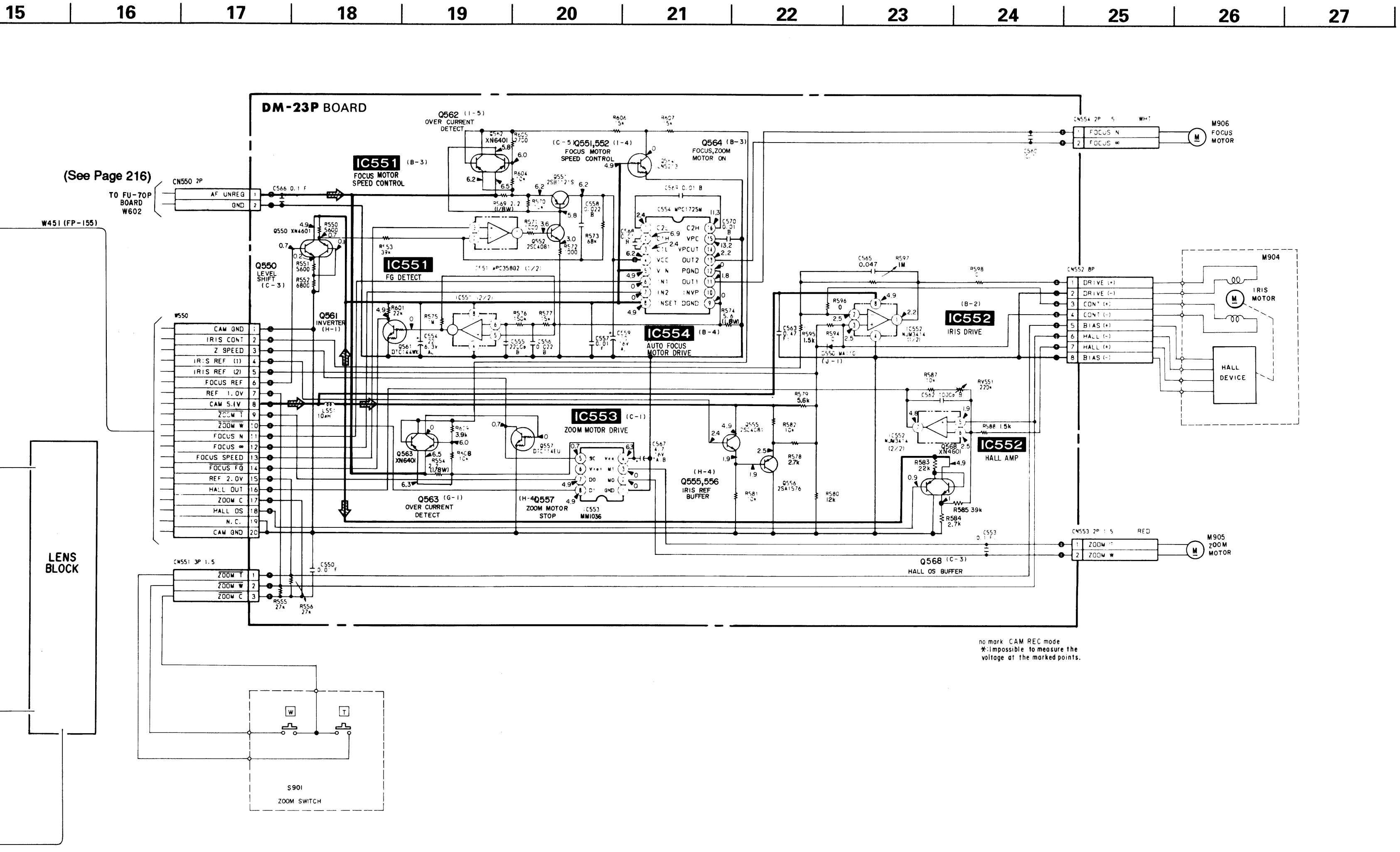

CN553
CN554
CN552
IC552
IC551
IC554
IC553
C564
RV551
Q568
Q550
R550
R574
1-629-183-
24
A
B
C
D
E

DM-23P BOARD (CONDUCTOR SIDE)


Q563
Q557
Q556
Q562
Q552
D550
R582
R605
R604
R607
R606
R576
R577
R595
R598
C565
C590
C599
1-629-183
24
F
G
H
I
J
1
2
3
4
5



IC453 (D-2)
A/D CONVERTER
IC453 MSM6219BS-K
IC454 MB88341
IC454 EVR (F-11)
IC457 SW (C-11)
IC457 μPD4053
D455 (E-4) MA141WA
Q456 BUFFER (C-4)
Q451 SW (F-11)
Q451 XN6215
Q463 (E-4) SW
Q463 2SC4081
Q459 (F-10) BUFFER
Q459 2SA1576
IC451 AF PROCESS (D-13)
IC451 CXD1204
IC452 AUTO FOCUS CPU (E-13)
IC452 MC68HC05C4FU
IC456 RESET (D-3)
IC456 S80541ALB
D451 MA110
D454 MA110
Q468, 469 (A-6) BUFFER
Q469 XN4601
Q468 2SA1576
Q452 (B-13) HPF1
Q453 (B-3) HPF
Q452 2SC4081
Q453 2SC4081
(B-12) Q464,465 AMP
Q464 2SC4081
Q454 2SC4081 (C-12)
Q455 XN6501 (B-11)
FL451 LPF
IC455 (A-6)
AGC/IRIS COMPO VOLTAGE DETECT
IC455 μPC324B
IC458 LM358PS (B-5)
IC459 (B-10)
IC459 SC14S66
CN451 20P
CAMERA GND
MAX GAIN
IRIS CONT
AGC CONT
S AGC CONT
AGC REF
V SUB CONT
YH
CAM 5V
HD
VD
CAM GND
AF CLK (4fsc)
CAM GND
SYS RST
SI
SO
SCK
AF CS
WND
TO VC-54P BOARD W223
(See Page 108)
CN454
REF 1.0V
REF 2.0V
IRIS VR
AF DISP
N.C.
TO FD-13P BOARD W201
(See Page 205)
CN451 20P
CAM GND
IRIS CONT
Z SPEED
IRIS REF (1)
IRIS REF (2)
FOCUS REF
REF 1.0V
CAM 5.0V
ZOOM T
ZOOM W
FOCUS N
FOCUS ∞
FOCUS SPEED
FOCUS FG
REF 2V
HALL OUT
ZOOM C
HALL OS
N.C.
CAM GND
(See Page 216)
TO FU-70P BOARD W602
CN550 2P
W451 (FP-155)
CN452 3P I 1.5 WHT
GND
FOCUS END
FOCUS FAR
CN453 3P I 1.5 RED
ZP
WP
TP
CN455 4P I 1.5 WHT
J STB
MOSI
SCK
GND
CN456
CAM 5V
F SENS
LENS BLOCK
CHASSIS
REF 1.0V
REF 2.0V
5.0V
FOUCS SPEED
AGC LOCK
AGC CONT
CL451
W550
CN551 3P
AF-47P BOARD
no mark: AF ON / OFF mode
( ): AF ON mode
⟨ ⟩: AF OFF mode
✱: Imopossible to measure the voltage at the marked points.



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27
DM-23P BOARD
(See Page 216)
TO FU-70P BOARD W602
CN550 2P
AF UNREG
GND
W451 (FP-155)
W550
CAM GND
IRIS CONT
Z SPEED
IRIS REF (1)
IRIS REF (2)
FOCUS REF
REF 1.0V
CAM 5.1V
ZOOM T
ZOOM W
FOCUS N
FOCUS ∞
FOCUS SPEED
FOCUS FG
REF 2.0V
HALL OUT
ZOOM C
HALL OS
N.C.
CAM GND
CN551 3P 1.5
ZOOM T
ZOOM W
ZOOM C
LENS BLOCK
S901
ZOOM SWITCH
W
T
Q550 LEVEL SHIFT (C-3)
Q561 INVERTER (H-1)
Q562 (I-5) OVER CURRENT DETECT
IC551 (B-3) FOCUS MOTOR SPEED CONTROL
IC551 FG DETECT
(C-5) Q551,552 (I-4) FOCUS MOTOR SPEED CONTROL
Q564 (B-3) FOCUS,ZOOM MOTOR ON
IC554 (B-4) AUTO FOCUS MOTOR DRIVE
IC553 (C-1) ZOOM MOTOR DRIVE
Q563 (G-1) OVER CURRENT DETECT
(H-4) Q557 ZOOM MOTOR STOP
IC553 MM1036
(H-4) Q555,556 IRIS REF BUFFER
(B-2) IC552 IRIS DRIVE
IC552 HALL AMP
Q568 (C-3) HALL OS BUFFER
CN554 2P S WHT
FOCUS N
FOCUS ∞
M906 FOCUS MOTOR
CN552 8P
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
BIAS (+)
HALL (-)
HALL (+)
BIAS (-)
M904
IRIS MOTOR
HALL DEVICE
CN553 2P 1.5 RED
ZOOM T
ZOOM W
M905 ZOOM MOTOR

no mark : CAM REC mode
✻:Impossible to measure the voltage at the marked points.

de

measure the
rked points.

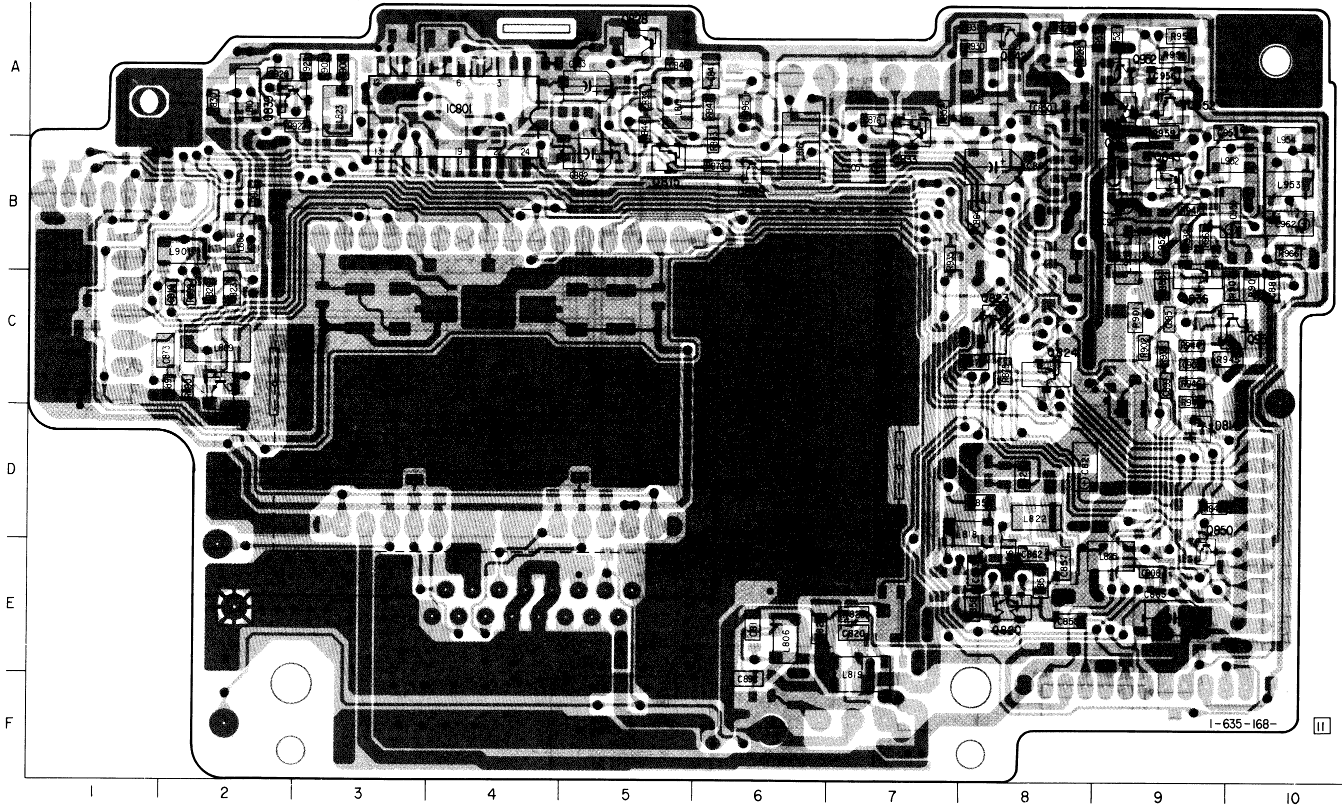
- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.

- Chip resistor are 1/16W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .

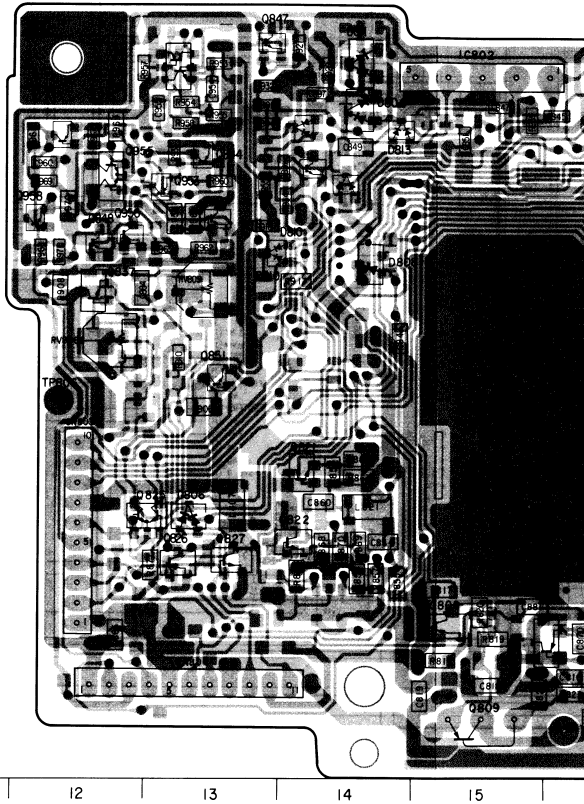
MR-30 (REC/PB AMP) PRINTED WIRING BOARDS

— Ref. No. MR-30 BOARD: 3000 series —

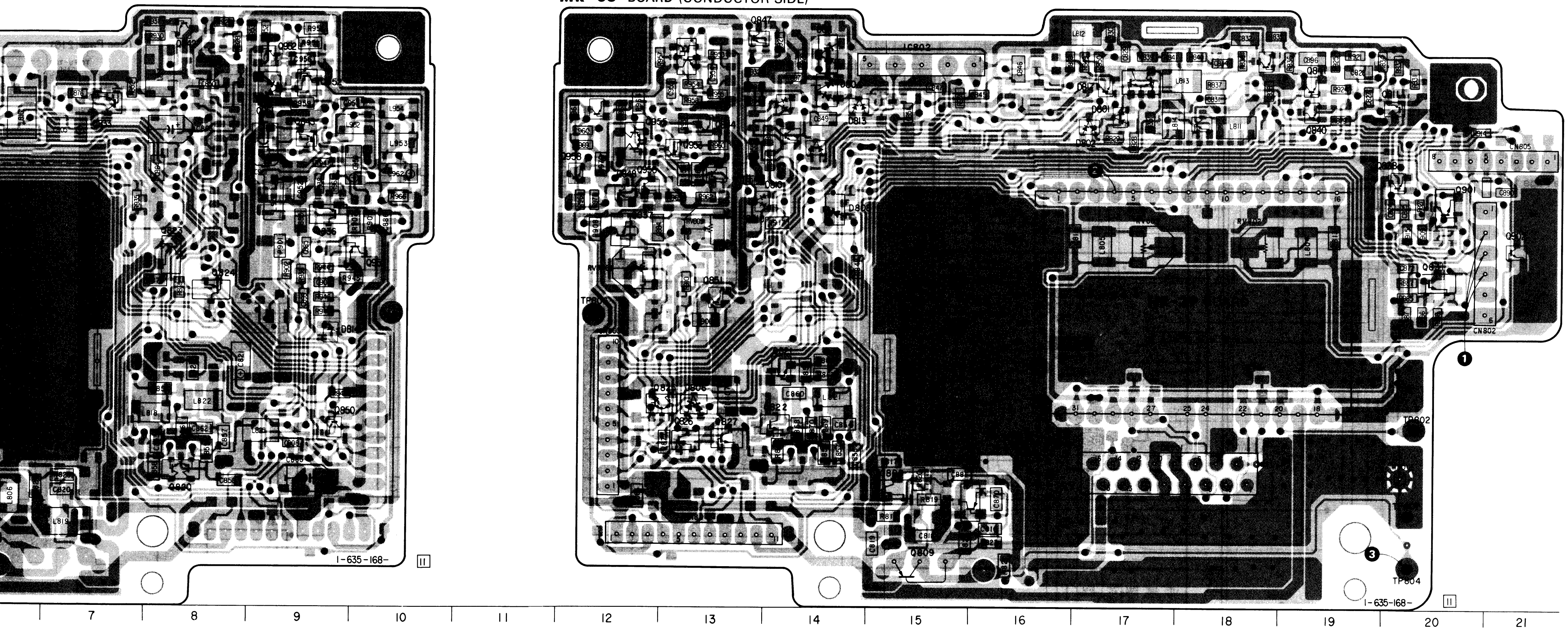
MR-30 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
IC801
L901
L822
L818
L806
L819
L953
L954
Q824
Q850
Q860
Q952
D814
R949
1-635-168-
11

MR-30 BOARD (CONDUCTOR SIDE)


11
12
13
14
15
Q847
Q855
Q851
Q826
Q827
Q809
D810
D813
D820
IC802
TP80
RV

MR-30 BOARD (CONDUCTOR SIDE)


1-635-168-
11
IC802
CN805
CN802
Q901
Q840
Q847
Q809
Q820
Q824
Q826
Q827
Q850
D801
D813
L811
L812
L813
L822
TP802
TP804
1
2
3
7
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9
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19
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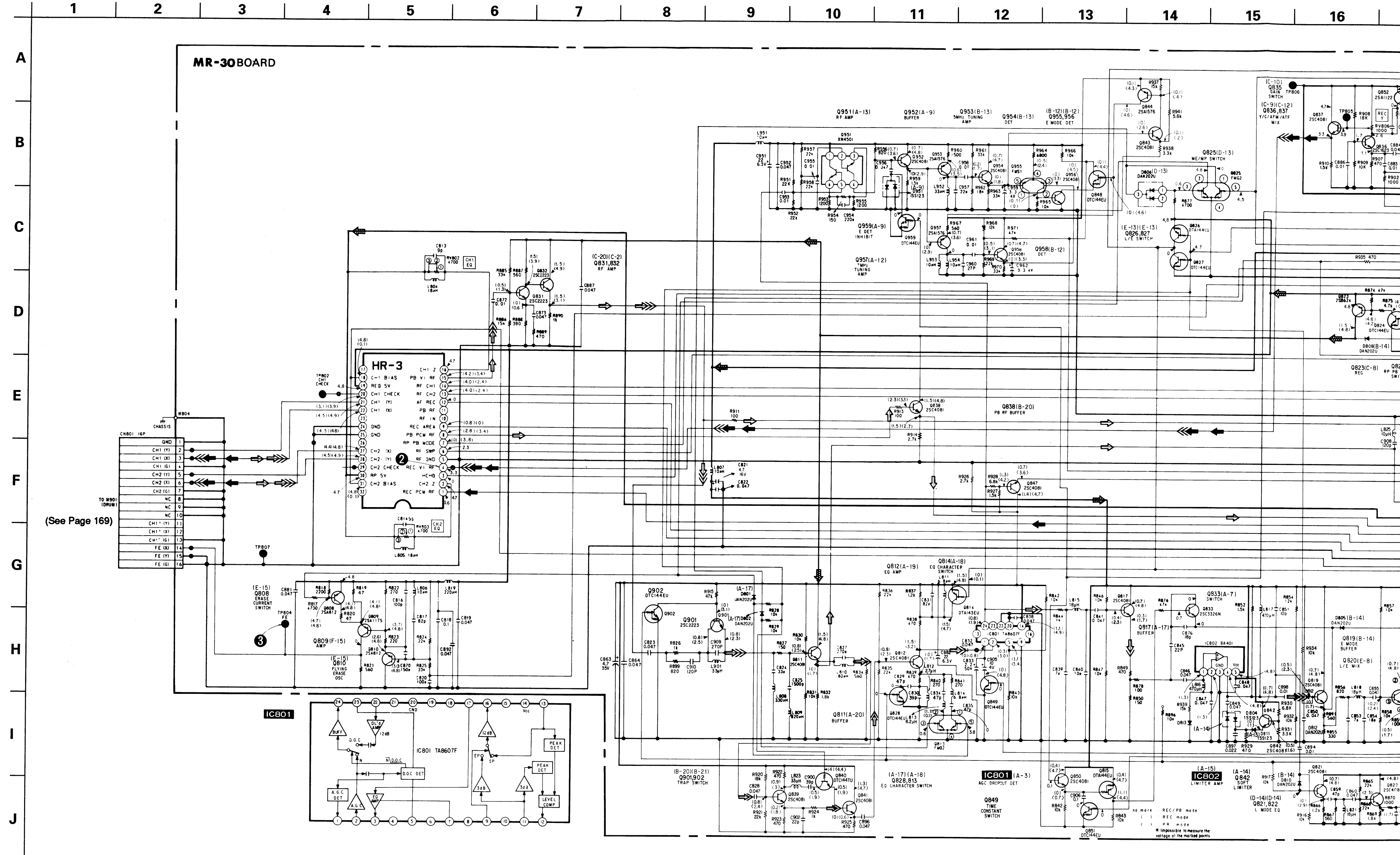
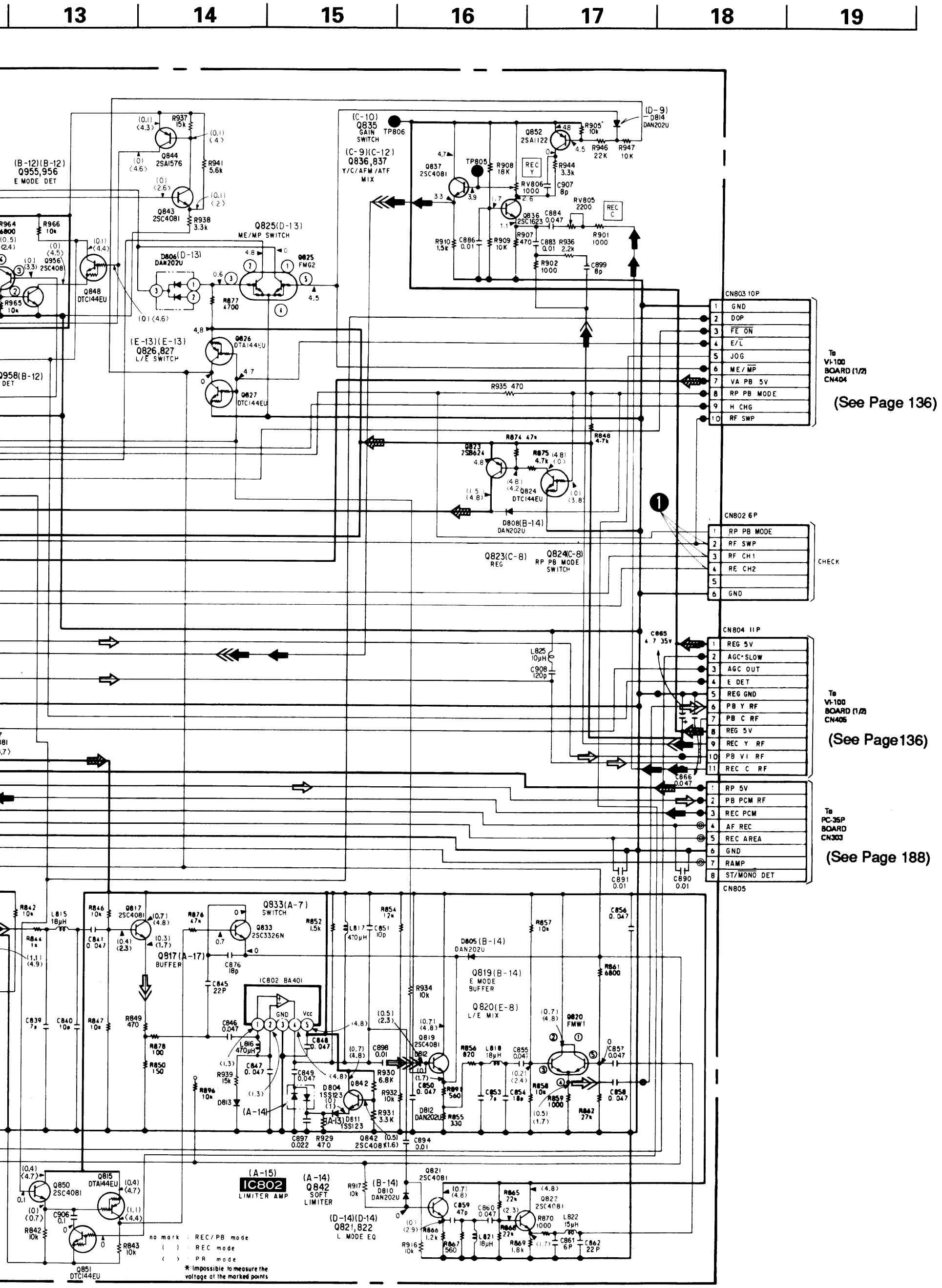
21


MR-30 BOARD
HR-3
CN801 16P
TO M901 (DRUM)
(See Page 169)
W804
CHASSIS
TP802 CH1 CHECK
TP807
TP804 FE
(E-15) Q808 ERASE CURRENT SWITCH
Q809(F-15) AMP
(E-15) Q810 FLYING ERASE OSC
(C-20)(C-2) Q831,832 RF AMP
IC801
IC801 TA8607F
Q951(A-13) RF AMP
Q952(A-9) BUFFER
Q953(B-13) 5MHz TUNING AMP
Q954(B-13) DET
(B-12)(B-12) Q955,956 E MODE DET
Q959(A-9) E DET INHIBIT
Q957(A-12) 7MHz TUNING AMP
Q958(B-12) DET
(E-13)(E-13) Q826,827 L/E SWITCH
Q825(D-13) ME/MP SWITCH
(C-10) Q835 GAIN SWITCH
(C-9)(C-12) Q836,837 Y/C/AFM/ATF MIX
Q838(B-20) PB RF BUFFER
Q823(C-8) REG
D808(B-14)
Q902 DTC144EU
Q901 2SC2223
(B-20)(B-21) Q901,902 TRAP SWITCH
Q812(A-19) EQ AMP
Q814(A-18) EQ CHARACTER SWITCH
Q811(A-20) BUFFER
(A-17)(A-18) Q828,813 EQ CHARACTER SWITCH
IC801 (A-3) AGC DROPOUT DET
Q849 TIME CONSTANT SWITCH
Q833(A-7) SWITCH
Q817(A-17) BUFFER
IC802 BA401
(A-15) IC802 LIMITER AMP
(A-14) Q842 SOFT LIMITER
(D-14)(D-14) Q821,822 L MODE EQ
D805(B-14)
Q819(B-14) E MODE BUFFER
Q820(E-8) L/E MIX
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
* Impossible to measure the voltage at the marked points


13
14
15
16
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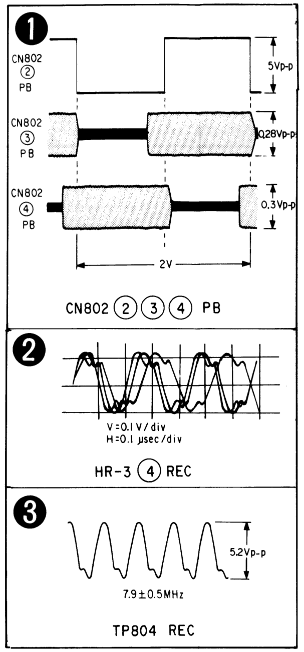
18
19
Q955,956
E MODE DET
Q844 2SA1576
Q843 2SC4081
Q848 DTC144EU
Q825(D-13)
ME/MP SWITCH
D806(D-13) DAN202U
Q826,827
L/E SWITCH
Q835 GAIN SWITCH
TP806
Q836,837
Y/C/AFM/ATF MIX
Q852 2SA1122
Q837 2SC4081
TP805
Q836 2SC1623
RV806 1000
RV805 2200
Q823 2SB624
Q824 DTC144EU
D808(B-14) DAN202U
Q823(C-8) REG
Q824(C-8) RP PB MODE SWITCH
CN803 10P
1 GND
2 DOP
3 FE ON
4 E/L
5 JOG
6 ME/MP
7 VA PB 5V
8 RP PB MODE
9 H CHG
10 RF SWP
To VI-100 BOARD (1/2) CN404
(See Page 136)
CN802 6P
1 RP PB MODE
2 RF SWP
3 RF CH1
4 RF CH2
5
6 GND
CHECK
CN804 11P
1 REG 5V
2 AGC·SLOW
3 AGC OUT
4 E DET
5 REG GND
6 PB Y RF
7 PB C RF
8 REG 5V
9 REC Y RF
10 PB VI RF
11 REC C RF
To VI-100 BOARD (1/2) CN405
(See Page136)
1 RP 5V
2 PB PCM RF
3 REC PCM
4 AF REC
5 REC AREA
6 GND
7 RAMP
8 ST/MONO DET
CN805
To PC-35P BOARD CN303
(See Page 188)
Q833(A-7) SWITCH
Q833 2SC3326N
Q817 2SC4081
Q817(A-17) BUFFER
IC802 BA401
D805(B-14) DAN202U
Q819(B-14) E MODE BUFFER
Q820(E-8) L/E MIX
Q820 FMW1
Q819 2SC4081
D804 1SS123
D811 1SS123
Q842 2SC4081
D812 DAN202U
D813
Q850 2SC4081
Q815 DTA144EU
Q851 DTC144EU
(A-15) IC802 LIMITER AMP
(A-14) Q842 SOFT LIMITER
(B-14) D810 DAN202U
(D-14)(D-14) Q821,822 L MODE EQ
Q821 2SC4081
Q822 2SC4081
no mark : REC/PB mode
[ ] : REC mode
( ) : PB mode
*: Impossible to measure the voltage at the marked points

MR-30 BOARD


❶
CN802 ② PB
CN802 ③ PB
CN802 ④ PB
5Vp-p
0.28Vp-p
0.3Vp-p
2V
CN802 ②③④ PB
❷
V=0.1V/div
H=0.1 μsec/div
HR-3 ④ REC
❸
5.2Vp-p
7.9±0.5MHz
TP804 REC

- **SIGNAL PATH**

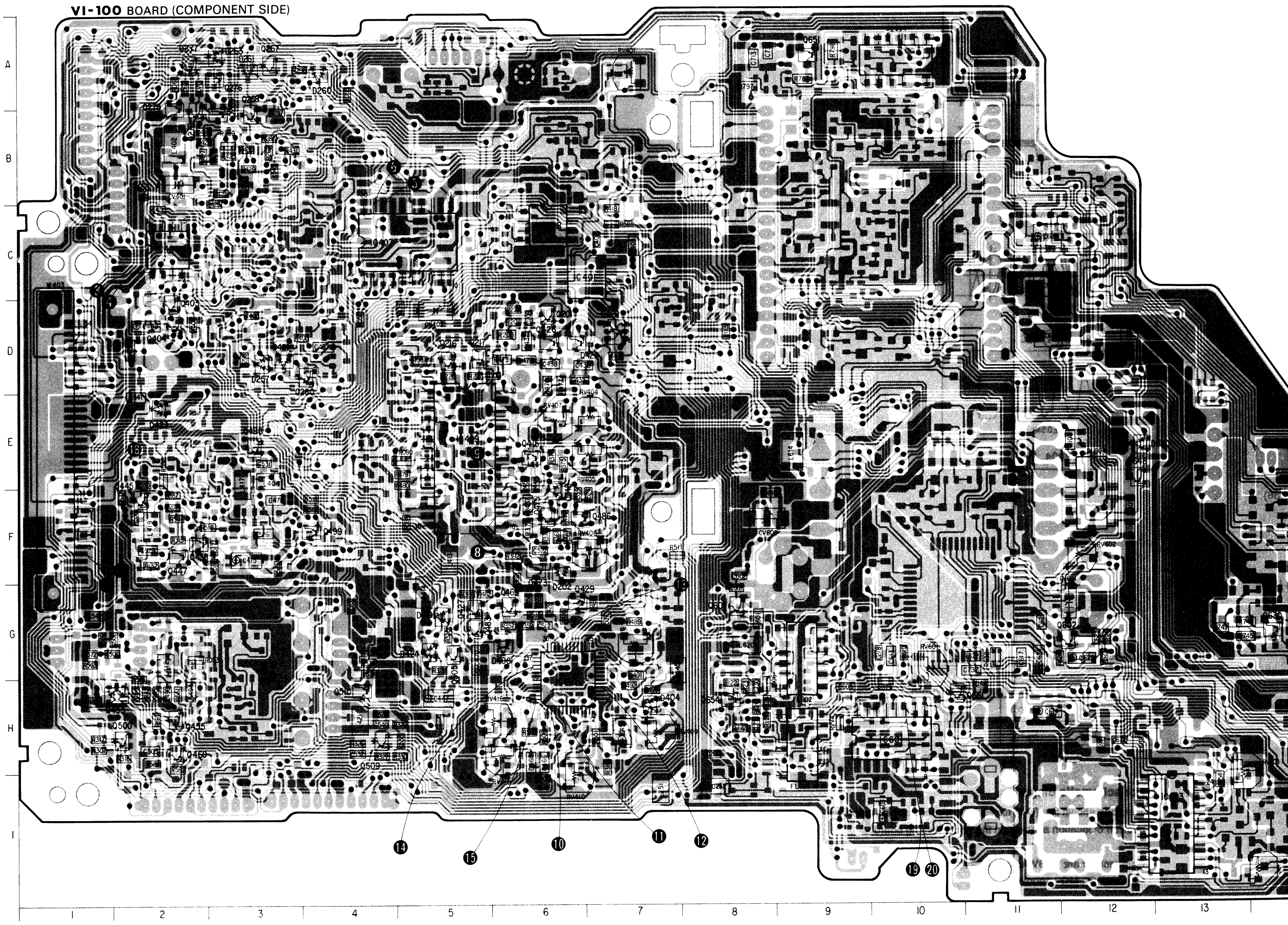
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡»	➡»»	➡
PB	⇨	⇨»	⇨»»	⇨

- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.

- Chip resistor are 1/16W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .

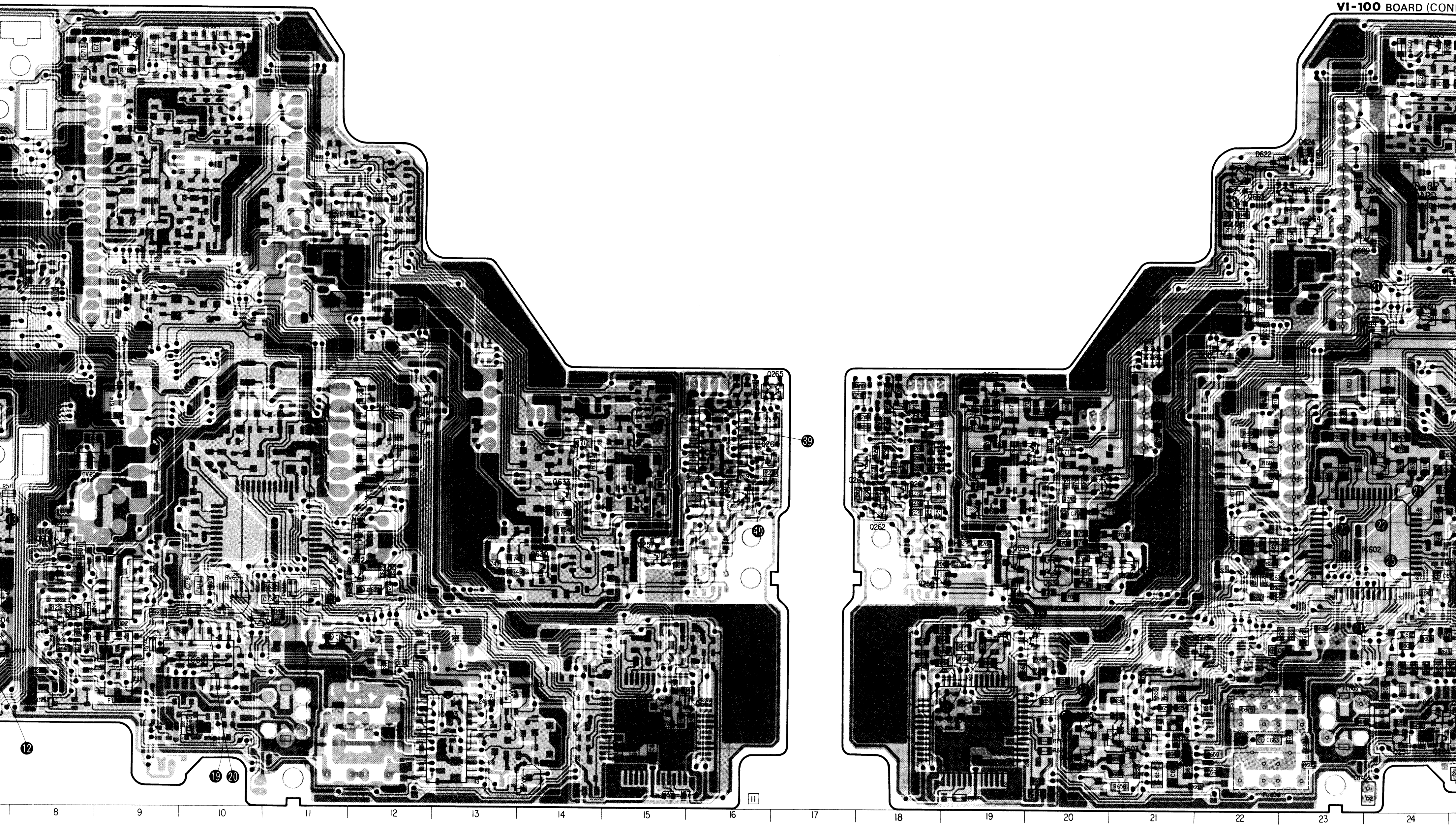
VI-100 (VIDEO SIGNAL PROCESS) PRINTED WIRING BOARDS

— Ref. No. VI-100 BOARD: 4000 series —

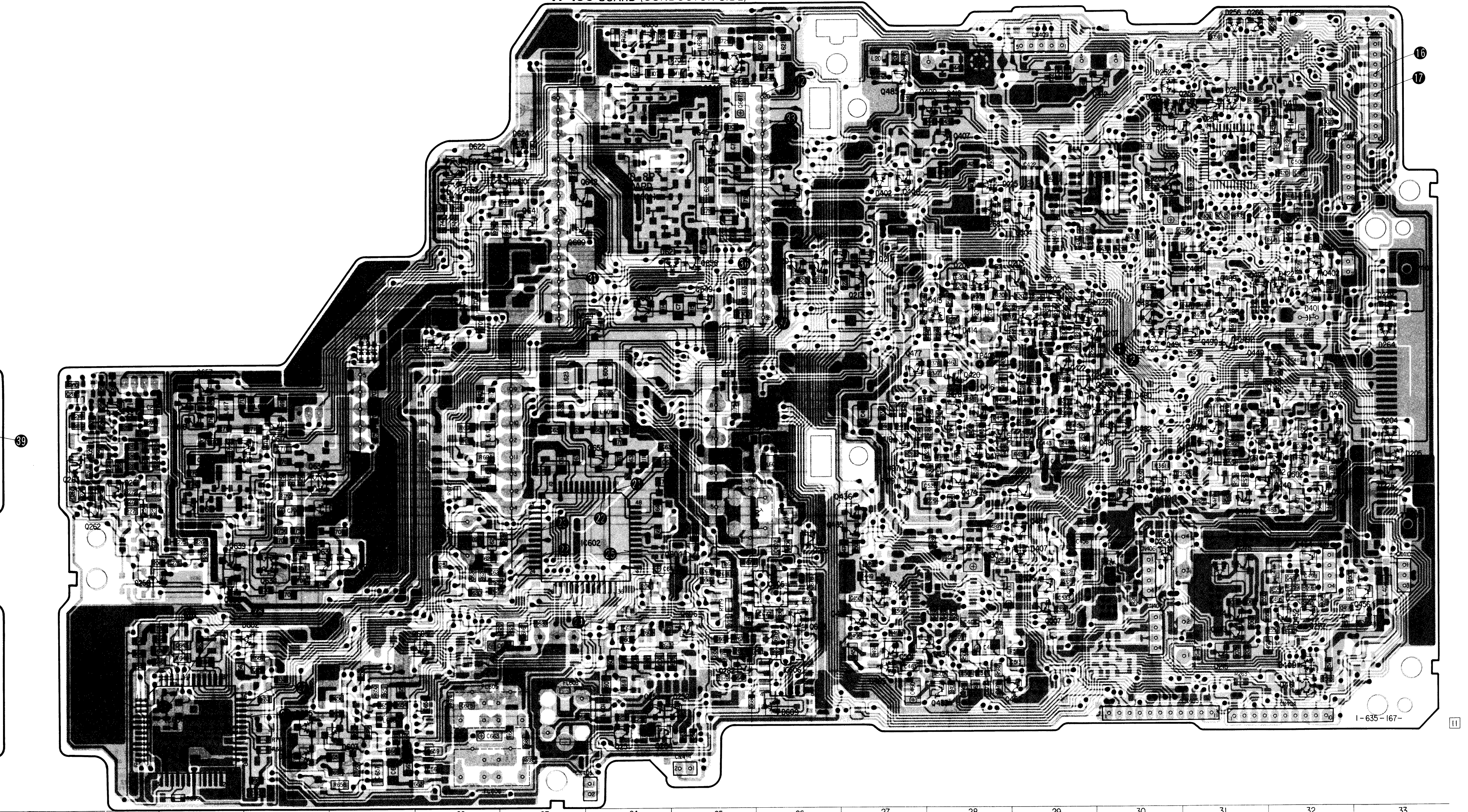


VI-100 BOARD (COMPONENT SIDE)

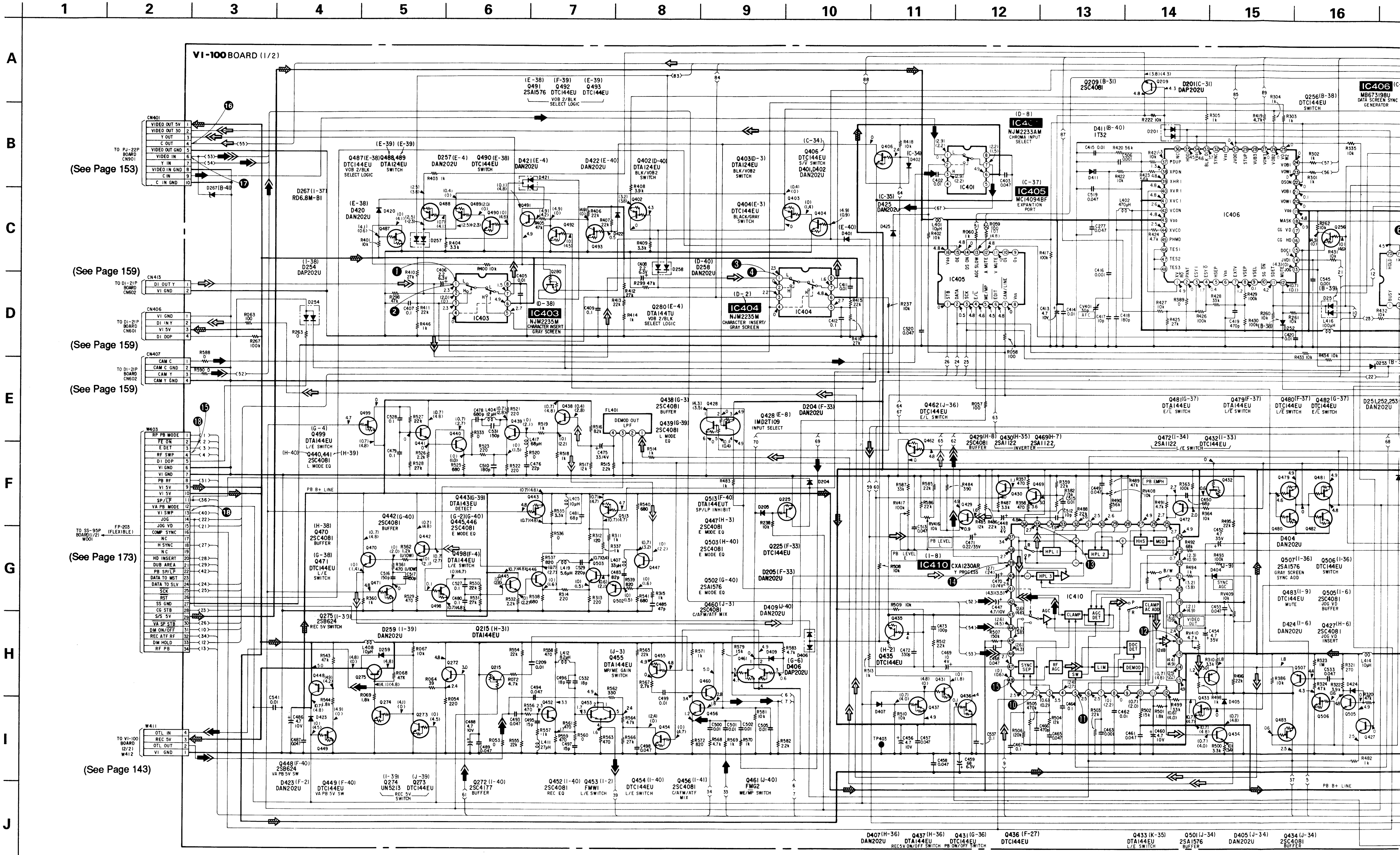
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
12
13
⑥
⑤
⑱
⑧
⑬
⑭
⑮
⑩
⑪
⑫
⑲
⑳
IC401
IC402
IC403
Q403
Q404
Q445
Q447
Q455
Q456
Q500
Q509
Q429
Q202
Q651
D260
D257
CV401
CV601
RV402
RV404
RV405
RV406
RV407
RV410
RV416
RV601
RV602
L614


Q265
Q262
Q261
Q250
Q622
Q624
Q641
IC602
RV602
RV601
CV601
R511
Q633
Q632
L605

VI-100 BOARD (CONDUCTOR SIDE)


⑯
⑰
㊴
IC602
1-635-167-
11

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33


VI-100 BOARD (1/2)
(See Page 153)
TO PJ-22P BOARD CN901
CN401
VIDEO OUT 5V
VIDEO OUT 30
Y OUT
C OUT
VIDEO OUT GND
VIDEO IN
Y IN
VIDEO IN GND
C IN
C IN GND
(See Page 159)
TO DI-21P BOARD CN602
CN413
DI OUT Y
VI GND
(See Page 159)
TO DI-21P BOARD CN601
CN406
VI GND
DI IN Y
VI 5V
DI DOP
(See Page 159)
TO DI-21P BOARD CN602
CN407
CAM C
CAM C GND
CAM Y
CAM Y GND
(See Page 173)
TO SS-95P BOARD (1/2) W001
FP-203 (FLEXIBLE)
W403
(See Page 143)
TO VI-100 BOARD (2/2) W412
W411
OTL IN
REC 5V
OTL OUT
VI GND
IC403
NJM2235M
CHARACTER INSERT/GRAY SCREEN
IC404
NJM2235M
CHARACTER INSERT/GRAY SCREEN
IC401
NJM2233AM
CHROMA INPUT SELECT
IC405
MC14094BF
EXPANTION PORT
IC406
MB673198U
DATA SCREEN SYNC GENERATOR
IC410
CXA1230AR
Y PROCESS
FL401
DEMOD OUT LPF
PB B+ LINE
Q209 (B-31) 2SC4081
D201 (C-31) DAP202U
D411 (B-40) 1T32
Q256 (B-38) DTC144EU SWITCH
Q491 2SA1576, Q492 DTC144EU, Q493 DTC144EU VOB 2/BLK SELECT LOGIC
Q487 (E-38) DTC144EU VOB 2/BLK SELECT LOGIC
Q488, 489 DTA124EU SWITCH
D257 (E-4) DAN202U
Q490 (E-38) DTC144EU SWITCH
D421 (E-4) DAN202U
D422 (E-40) DAN202U
Q402 (D-40) DTA124EU BLK/VOB2 SWITCH
Q403 (D-3) DTA124EU BLK/VOB2 SWITCH
Q406 DTC144EU S/V SWITCH
D401, D402 DAN202U
Q404 (E-3) DTC144EU BLACK/GRAY SWITCH
D267 (1-37) RD6.8M-B1
D420 DAN202U
D254 DAP202U
D258 DAN202U
Q280 (E-4) DTA144TU VOB 2/BLK SELECT LOGIC
D425 DAN202U
Q499 DTA144EU L/E SWITCH
Q440, 441 2SC4081 L MODE EQ
Q438 2SC4081 BUFFER
Q439 2SC4081 L MODE EQ
Q428 (E-8) IMD2T109 INPUT SELECT
D204 (F-33) DAN202U
Q462 (J-36) DTC144EU E/L SWITCH
Q429 (H-8) 2SC4081 BUFFER
Q430 (H-35) 2SA1122, Q469 (H-7) 2SA1122 INVERTER
Q472 (1-34) 2SA1122
Q432 (1-33) DTC144EU L/E SWITCH
Q481 (G-37) DTA144EU E/L SWITCH
Q479 (F-37) DTA144EU L/E SWITCH
Q480 (F-37) DTC144EU L/E SWITCH
Q482 (G-37) DTC144EU E/L SWITCH
D251, 252, 253 DAN202U
Q442 (G-40) 2SC4081 BUFFER
Q443 (G-39) DTA143EU DETECT
Q445, 446 2SC4081 E MODE EQ
Q498 (F-4) DTA144EU L/E SWITCH
Q470 2SC4081 BUFFER
Q471 DTC144EU L/E SWITCH
Q513 (F-40) DTA144EUT SP/LP INHIBIT
Q447 (H-3) 2SC4081 E MODE EQ
Q503 (H-40) 2SC4081 E MODE EQ
Q502 (G-40) 2SA1576 E MODE EQ
Q460 (J-3) 2SC4081 C/AFM/ATF MIX
Q225 (F-33) DTC144EU
D205 (F-33) DAN202U
D409 (J-40) DAN202U
D404 DAN202U
Q507 (1-36) 2SA1576 GRAY SCREEN SYNC ADD
Q506 (1-36) DTC144EU SWITCH
Q483 (1-9) DTC144EU MUTE
Q505 (1-6) 2SC4081 JOG VD BUFFER
D424 (1-6) DAN202U
Q427 (H-6) 2SC4081 JOG VD INSERT
Q275 (1-39) 2SB624 REC 5V SWITCH
D259 (1-39) DAN202U
Q215 (H-31) DTA144EU
Q455 DTA144EU MP/ME GAIN SWITCH
D406 DAP202U
Q435 DTC144EU
Q448 (F-40) 2SB624 VA PB 5V SW
D423 (F-2) DAN202U
Q449 (F-40) DTC144EU VA PB 5V SW
Q274 UN5213, Q273 DTC144EU REC 5V SWITCH
Q272 (1-40) 2SC4177 BUFFER
Q452 (1-40) 2SC4081 REC EQ
Q453 (1-2) FMW1 L/E SWITCH
Q454 (1-40) DTC144EU L/E SWITCH
Q456 (1-41) 2SC4081 C/AFM/ATF MIX
Q461 (J-40) FMG2 ME/MP SWITCH
D407 (H-36) DAN202U
Q437 (H-36) DTA144EU REC5V ON/OFF SWITCH
Q431 (G-36) DTA144EU PB ON/OFF SWITCH
Q436 (F-27) DTC144EU
Q433 (K-35) DTA144EU L/E SWITCH
Q501 (J-34) 2SA1576 BUFFER
D405 (J-34) DAN202U
Q434 (J-34) 2SC4081 BUFFER
TP403
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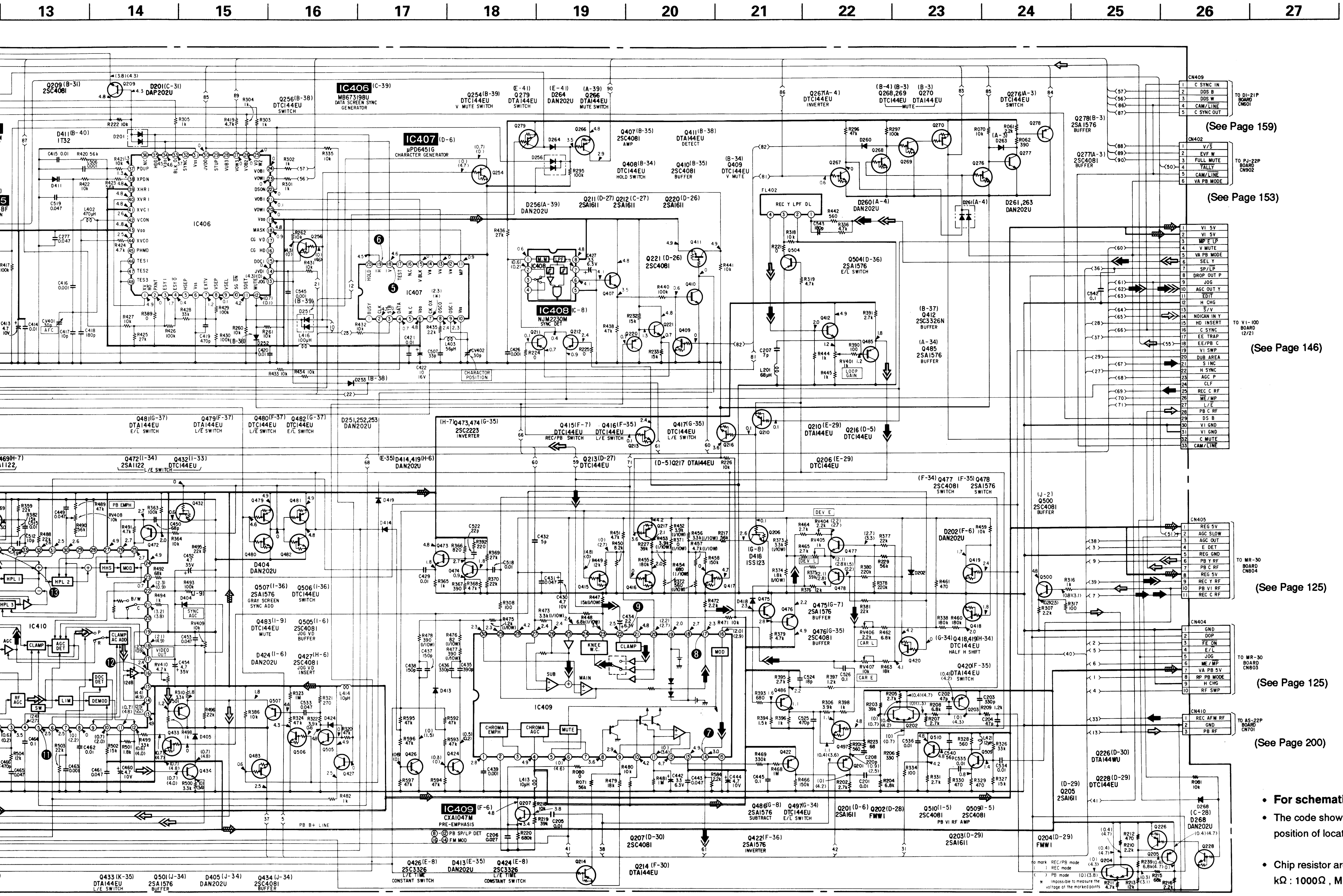
J



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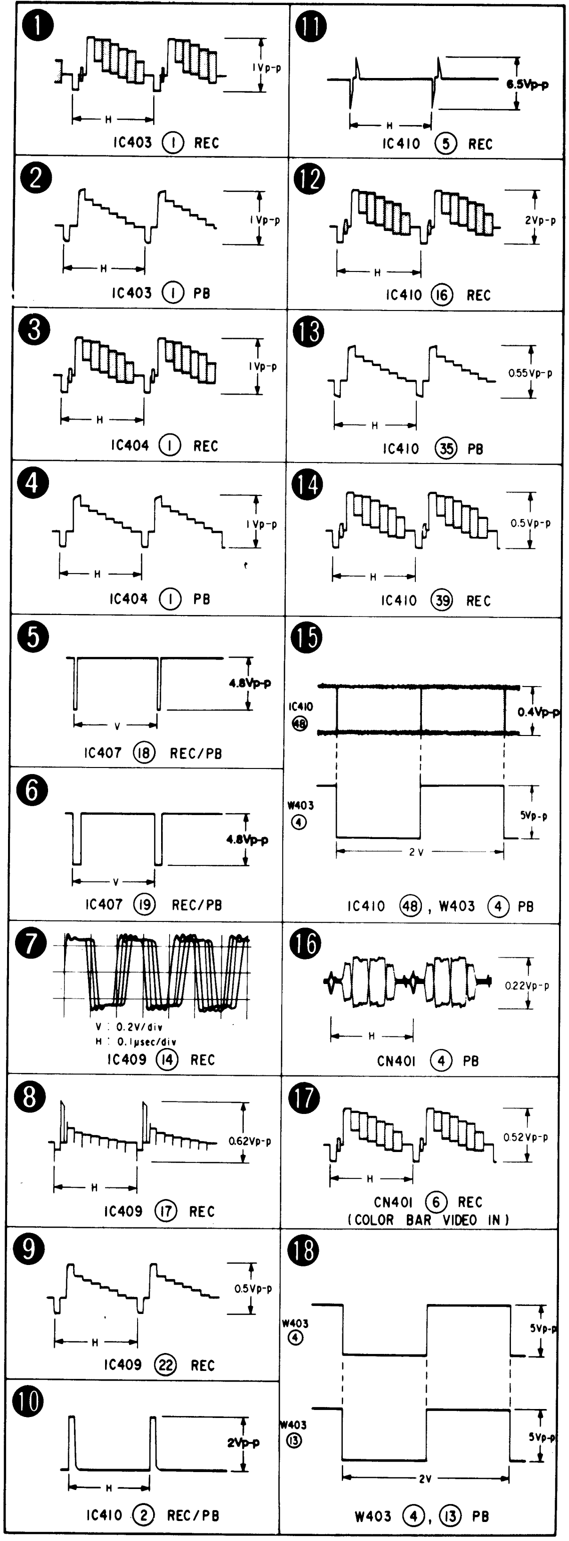
IC406 (C-39) MB673198U DATA SCREEN SYNC GENERATOR
IC407 (D-6) μPD6451G CHARACTER GENERATOR
IC408 (C-8) NJM2230M SYNC DET
IC409 (F-6) CXA1047M PRE-EMPHASIS
IC410
CN409
1 C SYNC IN
2 DDS B
3 DDS W
4 CAM/LINE
5 C SYNC OUT
TO DI-21P BOARD CN601
(See Page 159)
CN402
1 V/S
2 EVF W
3 FULL MUTE
4 TALLY
5 CAM/LINE
6 VA PB MODE
TO PJ-22P BOARD CN902
(See Page 153)
1 VI 5V
2 VI 5V
3 MP E LP
4 V MUTE
5 VA PB MODE
6 SEL Y
7 SP/LP
8 DROP OUT P
9 JOG
10 AGC OUT Y
11 EDIT
12 H CHG
13 S/V
14 NOICAN IN Y
15 HD INSERT
16 C SYNC
17 EE TRAP
18 EE/PB C
19 VI SWP
20 DUB AREA
21 S INC
22 H SYNC
23 AGC P
24 CLF
25 REC C RF
26 ME/MP
27 L/E
28 PB C RF
29 DS B
30 VI GND
31 VI GND
32 C MUTE
33 CAM/LINE
TO VI-100 BOARD (2/2)
(See Page 146)
CN405
1 REG 5V
2 AGC SLOW
3 AGC OUT
4 E DET
5 REG GND
6 PB Y RF
7 PB C RF
8 REG 5V
9 REC Y RF
10 PB VI RF
11 REC C RF
TO MR-30 BOARD CN804
(See Page 125)
CN404
1 GND
2 DOP
3 FE ON
4 E/L
5 JOG
6 ME/MP
7 VA PB 5V
8 RP PB MODE
9 H CHG
10 RF SWP
TO MR-30 BOARD CN803
(See Page 125)
CN410
1 REC AFM RF
2 GND
3 PB RF
TO AS-22P BOARD CN701
(See Page 200)
FL402 REC Y LPF DL
CHARACTOR POSITION
LOOP GAIN
PB B+ LINE
CHROMA EMPH
CHROMA AGC
MUTE
KNEE W.C.
CLAMP
MOD
SUB
MAIN
HPL 1
HPL 2
HHS
AGC DET
CLAMP AC ADD
DOC DET
RF AGC
LIM
DEMOD
SW
VIDEO OUT
SYNC AGC
PB EMPH
DEV E
DEV L
CAR L
CAR E
⑧-⑫ PB SP/LP DET
⑯-㉔ FM MOD
Q209 (B-31) 2SC4081
D201 (C-31) DAP202U
D411 (B-40) 1T32
Q256 (B-38) DTC144EU SWITCH
Q254 (B-39) DTC144EU V MUTE SWITCH
Q279 (E-41) DTA144EU SWITCH
D264 (E-41) DAN202U
Q266 (A-39) DTA144EU MUTE SWITCH
Q267 (A-4) DTC144EU INVERTER
Q268,269 (B-4)(B-3) DTC144EU MUTE
Q270 (B-3) DTA144EU
Q276 (A-3) DTC144EU SWITCH
Q278 (B-3) 2SA1576 BUFFER
Q277 (A-3) 2SC4081 BUFFER
Q407 (B-35) 2SC4081 AMP
Q411 (B-38) DTA144EU DETECT
Q408 (B-34) DTC144EU HOLD SWITCH
Q410 (B-35) 2SC4081 BUFFER
Q409 (B-34) DTC144EU V MUTE
D260 (A-4) DAN202U
D261,263 DAN202U
D256 (A-39) DAN202U
Q211 (D-27) 2SA1611
Q212 (C-27) 2SA1611
Q220 (D-26) 2SA1611
Q221 (D-26) 2SC4081
Q504 (D-36) 2SA1576 E/L SWITCH
Q412 (B-37) 2SC3326N BUFFER
Q485 (A-34) 2SA1576 BUFFER
Q481 (G-37) DTA144EU E/L SWITCH
Q479 (F-37) DTA144EU L/E SWITCH
Q480 (F-37) DTA144EU L/E SWITCH
Q482 (G-37) DTC144EU E/L SWITCH
D251,252,253 DAN202U
Q473,474 (H-7)(G-35) 2SC2223 INVERTER
Q415 (F-7) DTC144EU REC/PB SWITCH
Q416 (F-35) DTC144EU L/E SWITCH
Q417 (G-35) DTC144EU L/E SWITCH
Q210 (E-29) DTA144EU
Q216 (D-5) DTC144EU
Q472 (I-34) 2SA1122 L/E SWITCH
Q432 (I-33) DTC144EU
D414,419 (E-35)(H-6) DAN202U
Q213 (D-27) DTC144EU
Q217 (D-5) DTA144EU
Q206 (E-29) DTC144EU
Q477 (F-34) 2SC4081 SWITCH
Q478 (F-35) 2SA1576 SWITCH
Q500 (J-2) 2SC4081 BUFFER
D202 (F-6) DAN202U
D416 (G-8) 1SS123
D404 DAN202U
Q507 (I-36) 2SA1576 GRAY SCREEN SYNC ADD
Q506 (I-36) DTC144EU SWITCH
Q483 (I-9) DTC144EU MUTE
Q505 (I-6) 2SC4081 JOG VD BUFFER
D424 (I-6) DAN202U
Q427 (H-6) 2SC4081 JOG VD INSERT
Q475 (G-7) 2SA1576 BUFFER
Q476 (G-35) 2SC4081 BUFFER
Q418,419 (G-34)(H-34) DTC144EU HALF H SHIFT
Q420 (F-35) DTA144EU SWITCH
Q226 (D-30) DTA144WU
Q228 (D-29) DTC144EU
Q205 (D-29) 2SA1611
D268 (C-28) DAN202U
Q204 (D-29) FMW1
Q486 (G-8) 2SA1576 SUBTRACT
Q497 (G-34) DTC144EU E/L SWITCH
Q201 (D-6) 2SA1611
Q202 (D-28) FMW1
Q510 (I-5) 2SC4081
Q509 (I-5) 2SC4081 PB VI RF AMP
Q203 (D-29) 2SA1611
Q207 (D-30) 2SC4081
Q422 (F-36) 2SA1576 INVERTER
Q214 (F-30) DTA144EU
Q426 (E-8) 2SC3326 L/E TIME CONSTANT SWITCH
D413 (E-35) DAN202U
Q424 (E-8) 2SC3326 L/E TIME CONSTANT SWITCH
Q433 (K-35) DTA144EU L/E SWITCH
Q501 (J-34) 2SA1576 BUFFER
D405 (J-34) DAN202U
Q434 (J-34) 2SC4081 BUFFER
( ) REC/PB mode
( ) REC mode
〈 〉 PB mode
＊ impossible to measure the voltage at the marked points

- **For schematic diagrams.**
- The code shown like (C-9) for each semicondu
position of location address on the printed wirin
- Chip resistor are 1/16W unless otherwise noted
kΩ : 1000Ω , MΩ : 1000kΩ .

VI-100 BOARD (1/2)


❶
1Vp-p
H
IC403 ① REC
❷
1Vp-p
H
IC403 ① PB
❸
1Vp-p
H
IC404 ① REC
❹
1Vp-p
H
IC404 ① PB
❺
4.8Vp-p
V
IC407 ⑱ REC/PB
❻
4.8Vp-p
V
IC407 ⑲ REC/PB
❼
V : 0.2V/div
H : 0.1μsec/div
IC409 ⑭ REC
❽
0.62Vp-p
H
IC409 ⑰ REC
❾
0.5Vp-p
H
IC409 ㉒ REC
❿
2Vp-p
H
IC410 ② REC/PB
⓫
6.5Vp-p
H
IC410 ⑤ REC
⓬
2Vp-p
H
IC410 ⑯ REC
⓭
0.55Vp-p
H
IC410 ㉟ PB
⓮
0.5Vp-p
H
IC410 ㊴ REC
⓯
IC410 ㊽
0.4Vp-p
W403 ④
5Vp-p
2V
IC410 ㊽, W403 ④ PB
⓰
0.22Vp-p
H
CN401 ④ PB
⓱
0.52Vp-p
H
CN401 ⑥ REC
(COLOR BAR VIDEO IN)
⓲
W403 ④
5Vp-p
W403 ⑬
5Vp-p
2V
W403 ④, ⑬ PB

diagrams.

ke (C-9) for each semiconductor indicates the address on the printed wiring board.

/16W unless otherwise noted.
1000kΩ .

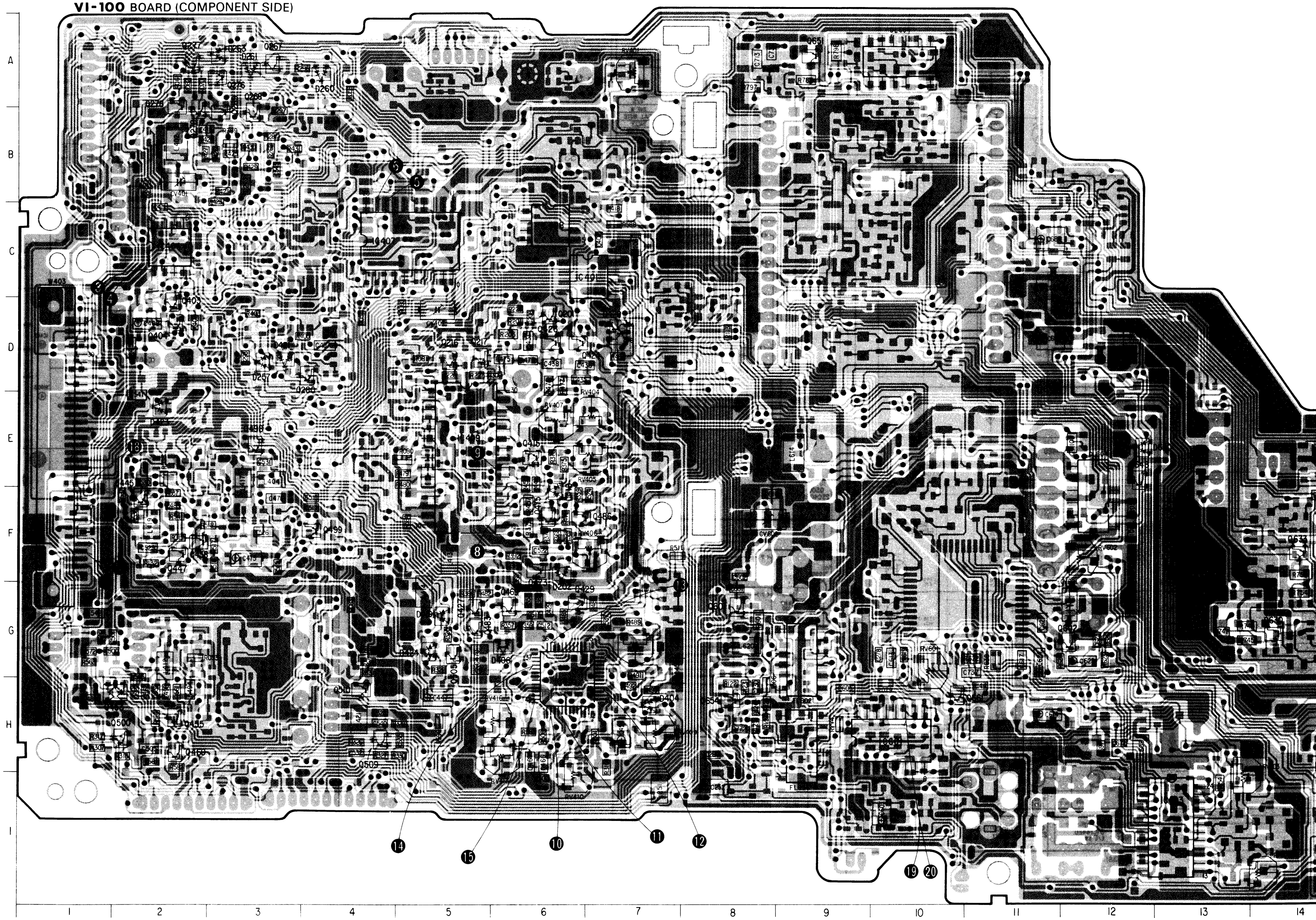
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡≫	➡⋙	➡
PB	⇨	⇨≫	⇨⋙	⇨

VI-100 (VIDEO SIGNAL PROCESS) PRINTED WIRING BOARDS

— Ref. No. VI-100 BOARD: 4000 series —

VI-100 BOARD (COMPONENT SIDE)



A
B
C
D
E
F
G
H
I
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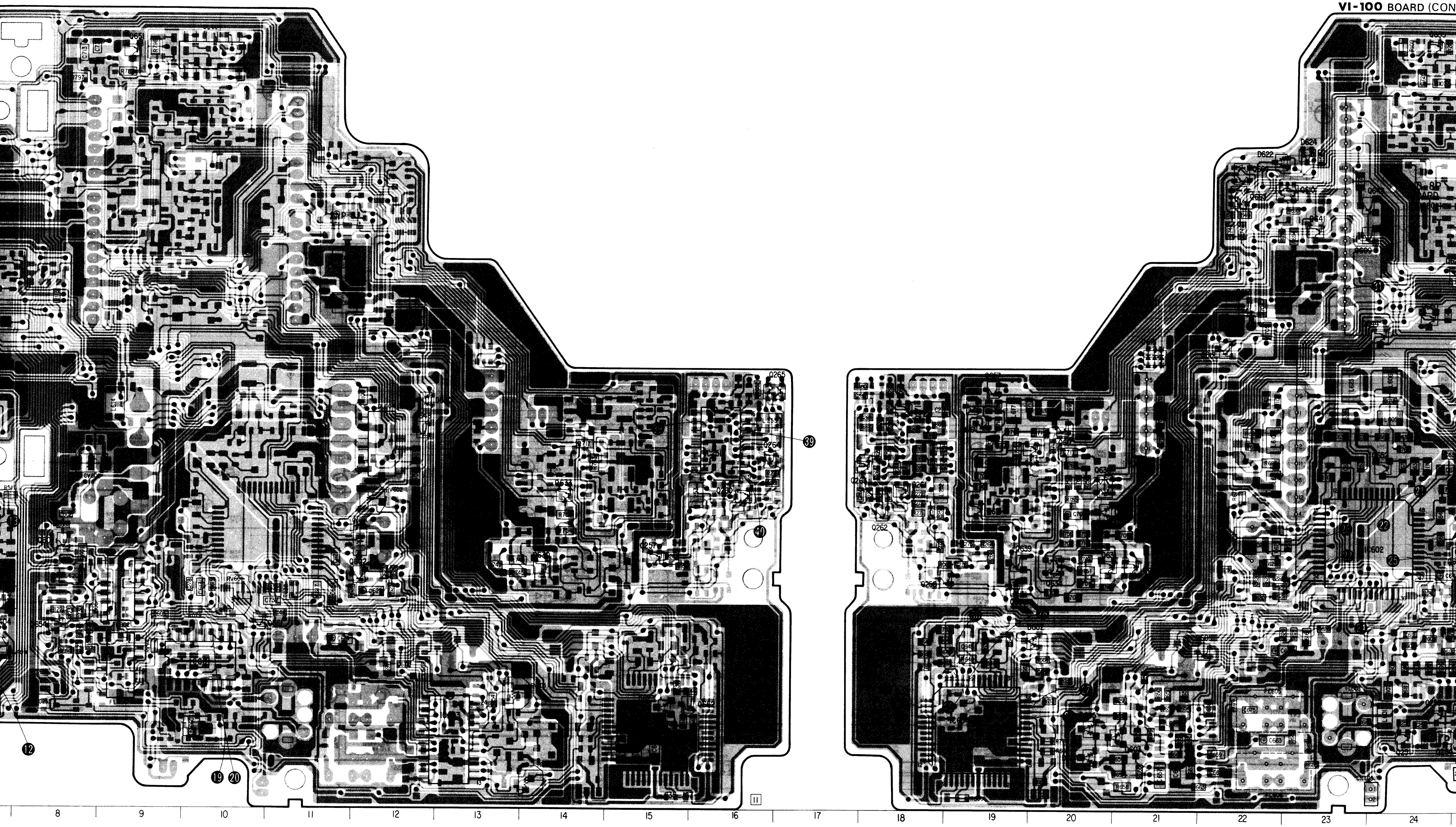
11
12
13
14
IC401
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑱
⑲
⑳

VI-100 BOARD (CON



⑫
⑲
⑳
㊴
㊵
Q265
Q264
Q257
Q262
Q261
IC602
D622
D624
L614
RV602
RV601
11
8
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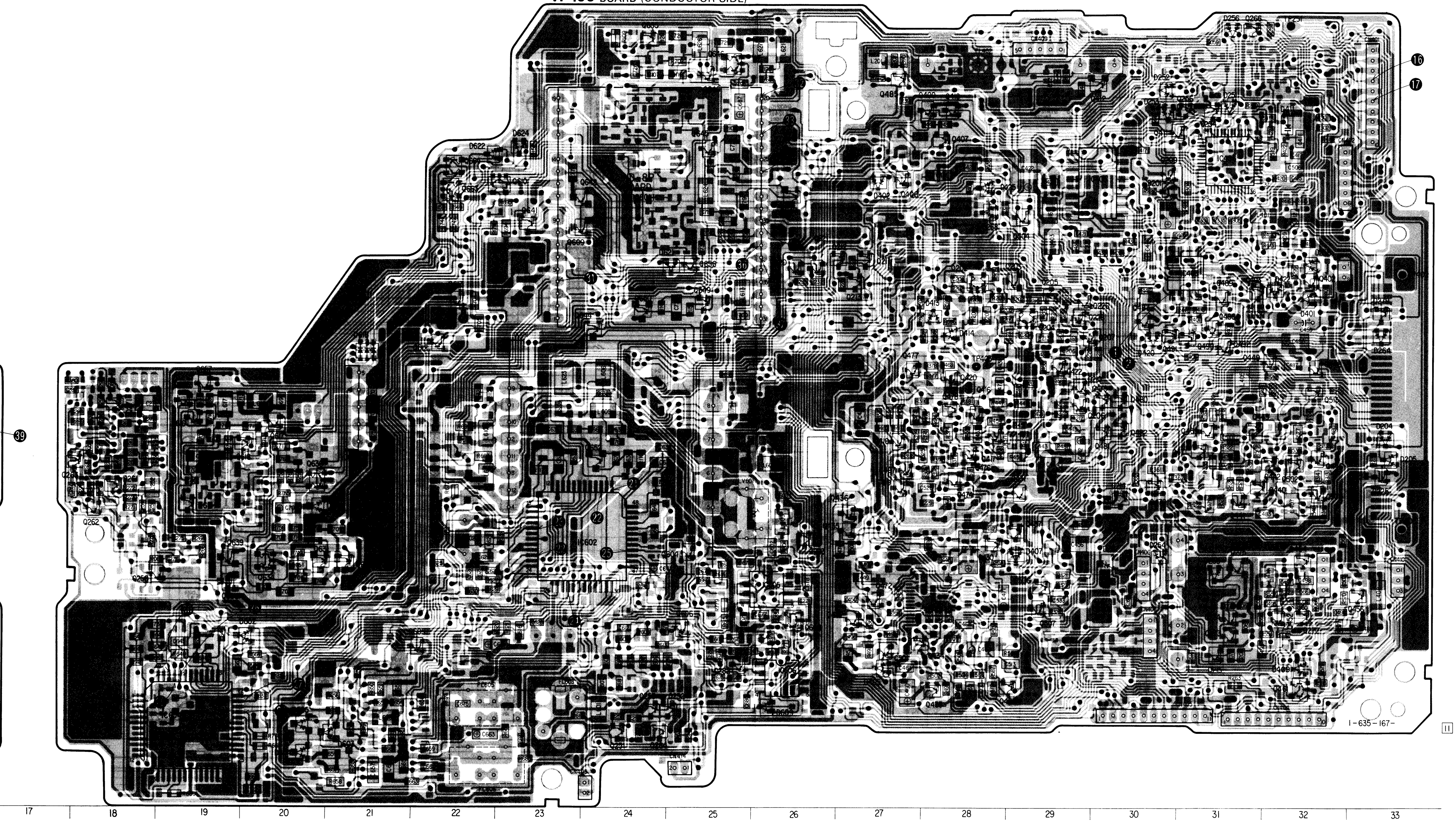
24

VI-100 BOARD (CONDUCTOR SIDE)



⑯
⑰
㊴
IC602
D624
D622
Q262
D256
D266
TP401
D252
D264
D204
D205
D401
Q401
Q420
Q477
D414
D407
D302
Q485
Q407
R253
1-635-167-
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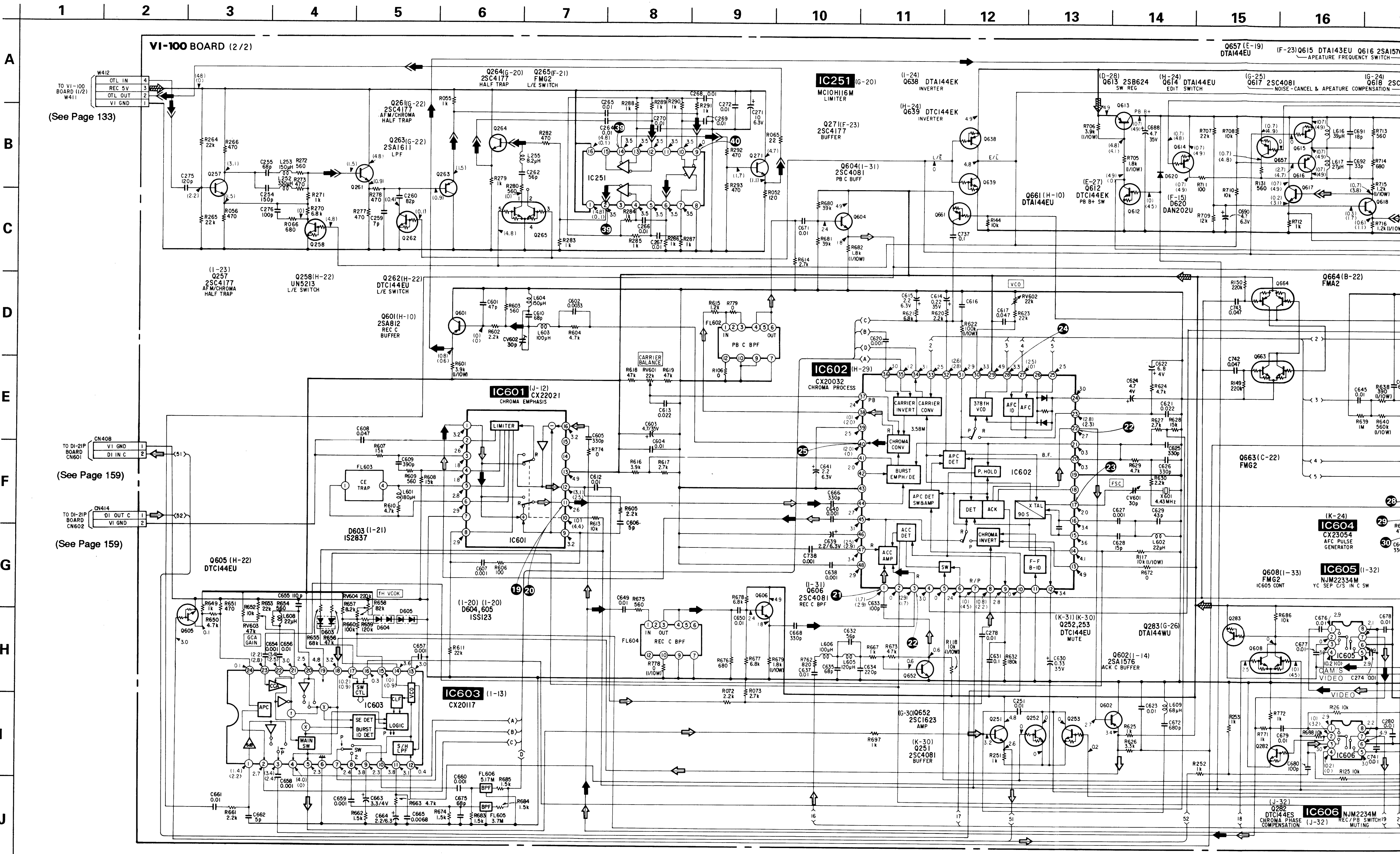
VI-100 BOARD (2/2)
TO VI-100 BOARD (1/2) W411
W412
OTL IN
REC 5V
OTL OUT
VI GND
(See Page 133)
TO DI-21P BOARD CN601
CN408
VI GND
DI IN C
(See Page 159)
TO DI-21P BOARD CN602
CN414
DI OUT C
VI GND
(See Page 159)
Q264 (G-20) 2SC4177 HALF TRAP
Q265 (F-21) FMG2 L/E SWITCH
Q261 (G-22) 2SC4177 AFM/CHROMA HALF TRAP
Q263 (G-22) 2SA1611 LPF
IC251 (G-20) MC10H116M LIMITER
Q271 (F-23) 2SC4177 BUFFER
Q638 (I-24) DTA144EK INVERTER
Q639 (H-24) DTC144EK INVERTER
Q604 (I-31) 2SC4081 PB C BUFF
Q613 (D-28) 2SB624 SW REG
Q614 (H-24) DTA144EU EDIT SWITCH
Q617 (G-25) 2SC4081 NOISE-CANCEL & APEATURE COMPENSATION
Q618 (G-24)
Q657 (E-19) DTA144EU
(F-23) Q615 DTA143EU Q616 2SA157 APEATURE FREQUENCY SWITCH
Q661 (H-10) DTA144EU
Q612 (E-27) DTC144EK PB B+ SW
D620 (F-15) DAN202U
Q257 (I-23) 2SC4177 AFM/CHROMA HALF TRAP
Q258 (H-22) UN5213 L/E SWITCH
Q262 (H-22) DTC144EU L/E SWITCH
Q601 (H-10) 2SA812 REC C BUFFER
Q664 (B-22) FMA2
IC601 (J-12) CX22021 CHROMA EMPHASIS
LIMITER
CE TRAP
FL603
D603 (I-21) 1S2837
IC602 (H-29) CX20032 CHROMA PROCESS
CARRIER INVERT
CARRIER CONV
378 fH VCO
AFC ID
AFC
CHROMA CONV
BURST EMPH/DE
APC DET
P. HOLD
APC DET SW&AMP
DET
ACK
X TAL 90 S
ACC DET
ACC AMP
SW
CHROMA INVERT
F-F B-ID
CARRIER BALANCE
PB C BPF
FL602
Q663 (C-22) FMG2
IC604 (K-24) CX23054 AFC PULSE GENERATOR
IC605 (I-32) NJM22334M YC SEP C/S IN C SW
Q608 (I-33) IC605 CONT
Q605 (H-22) DTC144EU
IC603 (I-13) CX20117
GCA GAIN
APC
SE DET
BURST ID DET
LOGIC
MAIN SW
S/H LPF
SW CTL
fH VCOK
D604, 605 (I-20) (I-20) 1SS123
Q606 (I-31) 2SC4081 REC C BPF
REC C BPF
FL604
Q252, 253 (K-31) (K-30) DTC144EU MUTE
Q283 (G-26) DTA144WU
Q602 (I-14) 2SA1576 ACK C BUFFER
Q652 (G-30) 2SC1623 AMP
Q251 (K-30) 2SC4081 BUFFER
Q282 (J-32) DTC144ES CHROMA PHASE COMPENSATION
IC606 (J-32) NJM2234M REC/PB SWITCH MUTING
IC1606
VIDEO
FL606 5.17M
FL605 3.7M
BPF
1
2
3
4
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A
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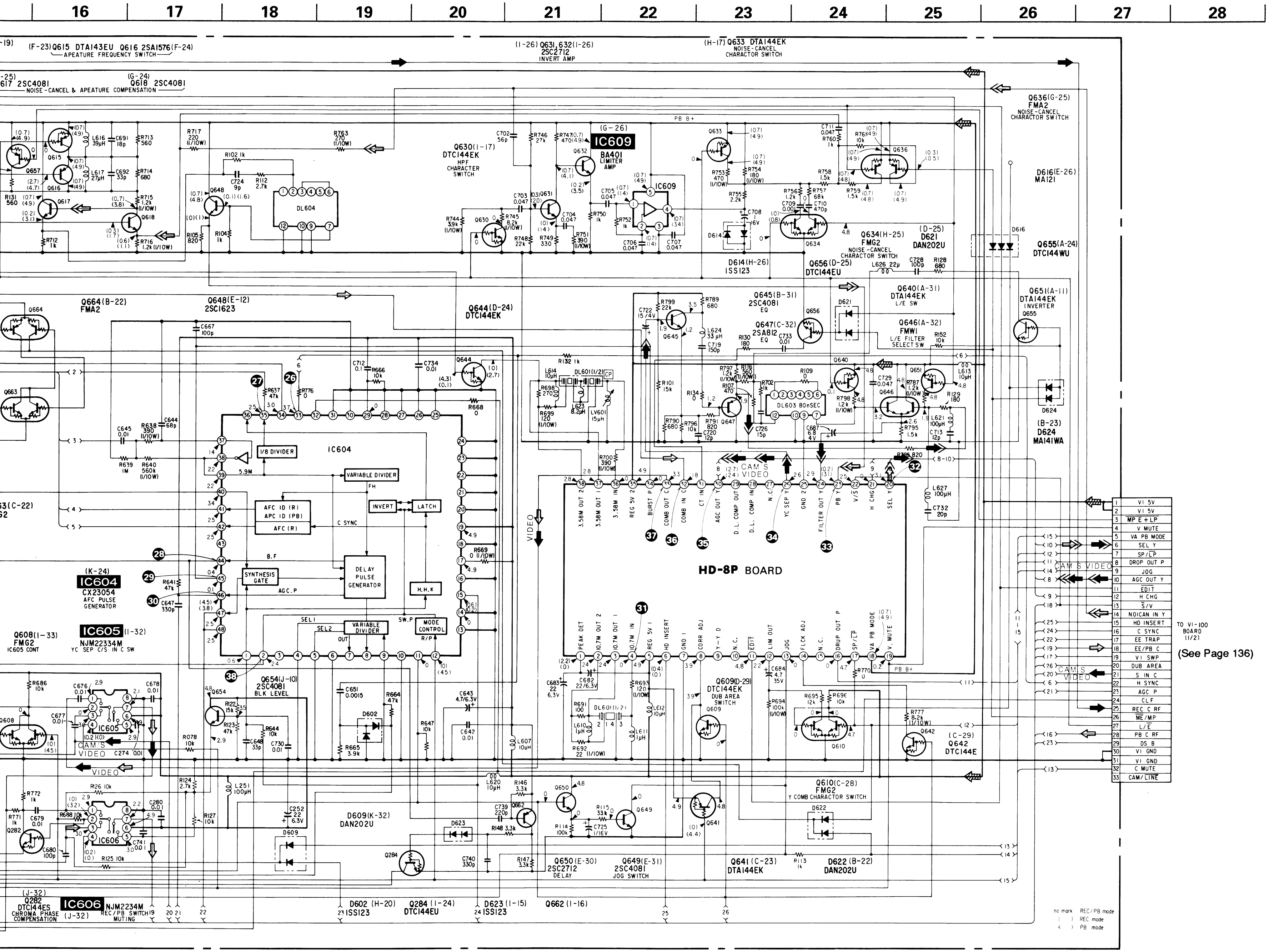
16
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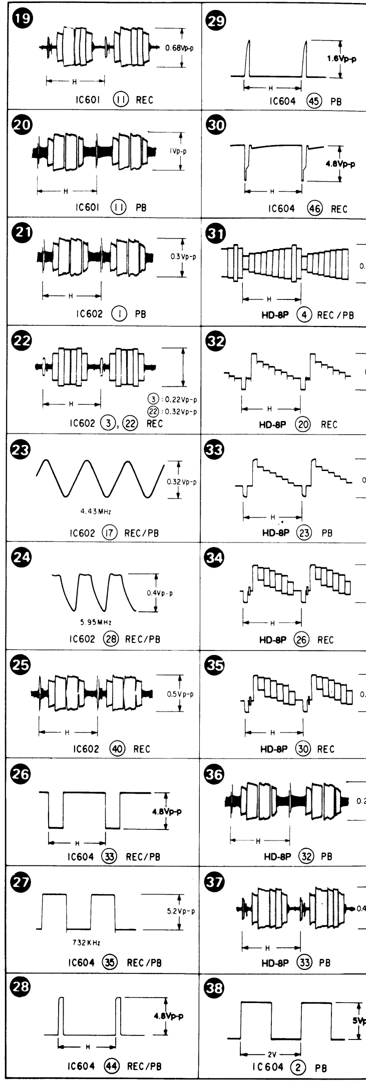
(F-23) Q615 DTA143EU Q616 2SA1576 (F-24)
APEATURE FREQUENCY SWITCH
(G-24) Q618 2SC4081
Q617 2SC4081
NOISE-CANCEL & APEATURE COMPENSATION
(I-26) Q631, 632 (I-26) 2SC2712 INVERT AMP
(H-17) Q633 DTA144EK NOISE-CANCEL CHARACTOR SWITCH
Q636 (G-25) FMA2 NOISE-CANCEL CHARACTOR SWITCH
Q630 (I-17) DTC144EK HPF CHARACTER SWITCH
(G-26) IC609 BA401 LIMITER AMP
DL604
Q634 (H-25) FMG2 NOISE-CANCEL CHARACTOR SWITCH
(D-25) D621 DAN202U
D614 (H-26) 1SS123
Q656 (D-25) DTC144EU
Q655 (A-24) DTC144WU
D616 (E-26) MA121
PB B+
Q664 (B-22) FMA2
Q648 (E-12) 2SC1623
Q644 (D-24) DTC144EK
Q645 (B-31) 2SC4081 EQ
Q647 (C-32) 2SA812 EQ
Q640 (A-31) DTA144EK L/E SW
Q646 (A-32) FMW1 L/E FILTER SELECT SW
Q651 (A-11) DTA144EK INVERTER
(B-23) D624 MA141WA
DL601 (1/2)
DL603 80nSEC
IC604
1/8 DIVIDER
VARIABLE DIVIDER
AFC ID (R)
AFC ID (PB)
AFC (R)
INVERT
LATCH
C SYNC
B.F
SYNTHESIS GATE
DELAY PULSE GENERATOR
AGC.P
H.H.K
VARIABLE DIVIDER
MODE CONTROL
SEL1
SEL2
SW.P
R/P
OUT
FH
5.9M
(K-24) IC604 CX23054 AFC PULSE GENERATOR
IC605 (I-32) NJM22334M YC SEP C/S IN C SW
Q608 (I-33) FMG2 IC605 CONT
IC605
IC606
CAM/S VIDEO
VIDEO
(J-32) Q282 DTC144ES CHROMA PHASE COMPENSATION
IC606 NJM2234M REC/PB SWITCH MUTING (J-32)
Q654 (J-10) 2SC4081 BLK LEVEL
D602
D609 (K-32) DAN202U
D623
D609
Q284
D602 (H-20) 1SS123
Q284 (I-24) DTC144EU
D623 (I-15) 1SS123
Q662 (I-16)
Q650 (E-30) 2SC2712 DELAY
Q649 (E-31) 2SC4081 JOG SWITCH
Q641 (C-23) DTA144EK
D622 (B-22) DAN202U
Q609 (D-29) DTC144EK DUB AREA SWITCH
Q610 (C-28) FMG2 Y COMB CHARACTOR SWITCH
(C-29) Q642 DTC144E
DL601 (1/2)
HD-8P BOARD
3.58M OUT 2
3.58M OUT
3.58M IN
REG 5V 2
BURST P
COMB OUT C
COMB IN C
CT IN
AGC OUT
D.L. COMP OUT
D.L. COMP IN
N.C.
YC SEP Y
GND 2
FILTER OUT Y
PB Y
V/S
H CHG
SEL
PEAK DET
10.7M OUT 2
10.7M OUT
10.7M IN
REG 5V 1
HD INSERT
GND 1
CORR ADJ
Y-Y D
N.C.
EDIT
LIM OUT
JOG
FLCK ADJ
N.C.
DRUP OUT P
SP/LP
VA PB MODE
V. MUTE
CAM S VIDEO
1 VI 5V
2 VI 5V
3 MP E + LP
4 V MUTE
5 VA PB MODE
6 SEL Y
7 SP/LP
8 DROP OUT P
9 JOG
10 AGC OUT Y
11 EDIT
12 H CHG
13 S/V
14 NOICAN IN Y
15 HD INSERT
16 C SYNC
17 EE TRAP
18 EE/PB C
19 VI SWP
20 DUB AREA
21 S IN C
22 H SYNC
23 AGC P
24 CLF
25 REC C RF
26 ME/MP
27 L/E
28 PB C RF
29 DS B
30 VI GND
31 VI GND
32 C MUTE
33 CAM/LINE
TO VI-100 BOARD (1/2)
(See Page 136)
no mark : REC/PB mode
( ) : REC mode
⟨ ⟩ : PB mode

VI-100 BOARD (2/2)

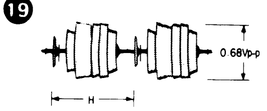

⑲ 0.68Vp-p IC601 ⑪ REC
⑳ 1Vp-p IC601 ⑪ PB
㉑ 0.3Vp-p IC602 ① PB
㉒ ③:0.22Vp-p ㉒:0.32Vp-p IC602 ③, ㉒ REC
㉓ 0.32Vp-p 4.43MHz IC602 ⑰ REC/PB
㉔ 0.4Vp-p 5.95MHz IC602 ㉘ REC/PB
㉕ 0.5Vp-p IC602 ㊵ REC
㉖ 4.8Vp-p IC604 ㉝ REC/PB
㉗ 5.2Vp-p 732KHz IC604 ㉟ REC/PB
㉘ 4.8Vp-p IC604 ㊹ REC/PB
㉙ 1.6Vp-p IC604 ㊺ PB
㉚ 4.8Vp-p IC604 ㊻ REC
㉛ HD-8P ④ REC/PB
㉜ HD-8P ⑳ REC
㉝ HD-8P ㉓ PB
㉞ HD-8P ㉖ REC
㉟ HD-8P ㉚ REC
㊱ HD-8P ㉜ PB
㊲ HD-8P ㉝ PB
㊳ 5V 2V IC604 ② PB
H

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

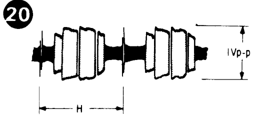
VI-100 BOARD (2/2)

19



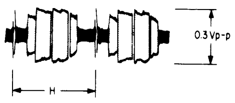
IC601 ⑪ REC

20



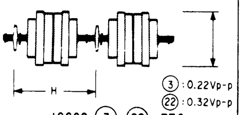
IC601 ⑪ PB

21



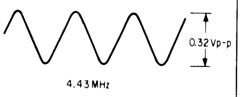
IC602 ① PB

22



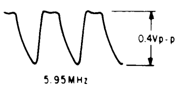
IC602 ③, ㉒ REC

23



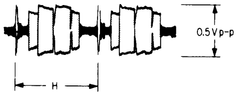
IC602 ⑰ REC/PB

24



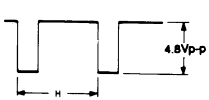
IC602 ㉘ REC/PB

25



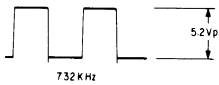
IC602 ㊵ REC

26



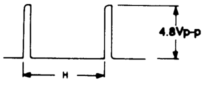
IC604 ㉝ REC/PB

27



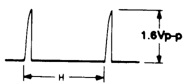
IC604 ㉟ REC/PB

28



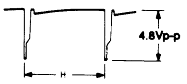
IC604 ㊹ REC/PB

29



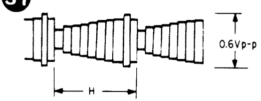
IC604 ㊺ PB

30



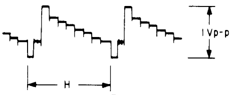
IC604 ㊻ REC

31



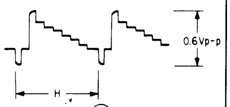
HD-8P ④ REC/PB

32



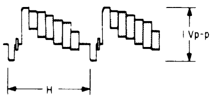
HD-8P ⑳ REC

33



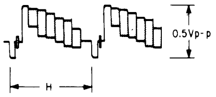
HD-8P ㉓ PB

34



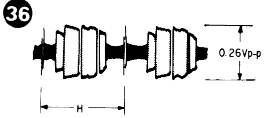
HD-8P ㉖ REC

35



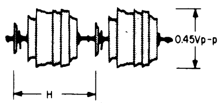
HD-8P ㉚ REC

36



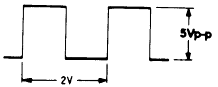
HD-8P ㉜ PB

37



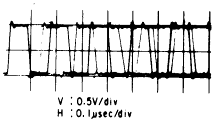
HD-8P ㉝ PB

38



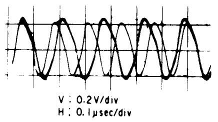
IC604 ② PB

39



IC251 ②⑭ REC

40



IC251 ⑨ REC

- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.
- Chip resistor are 1/16W unless otherwise noted. kΩ : 1000Ω , MΩ : 1000kΩ .

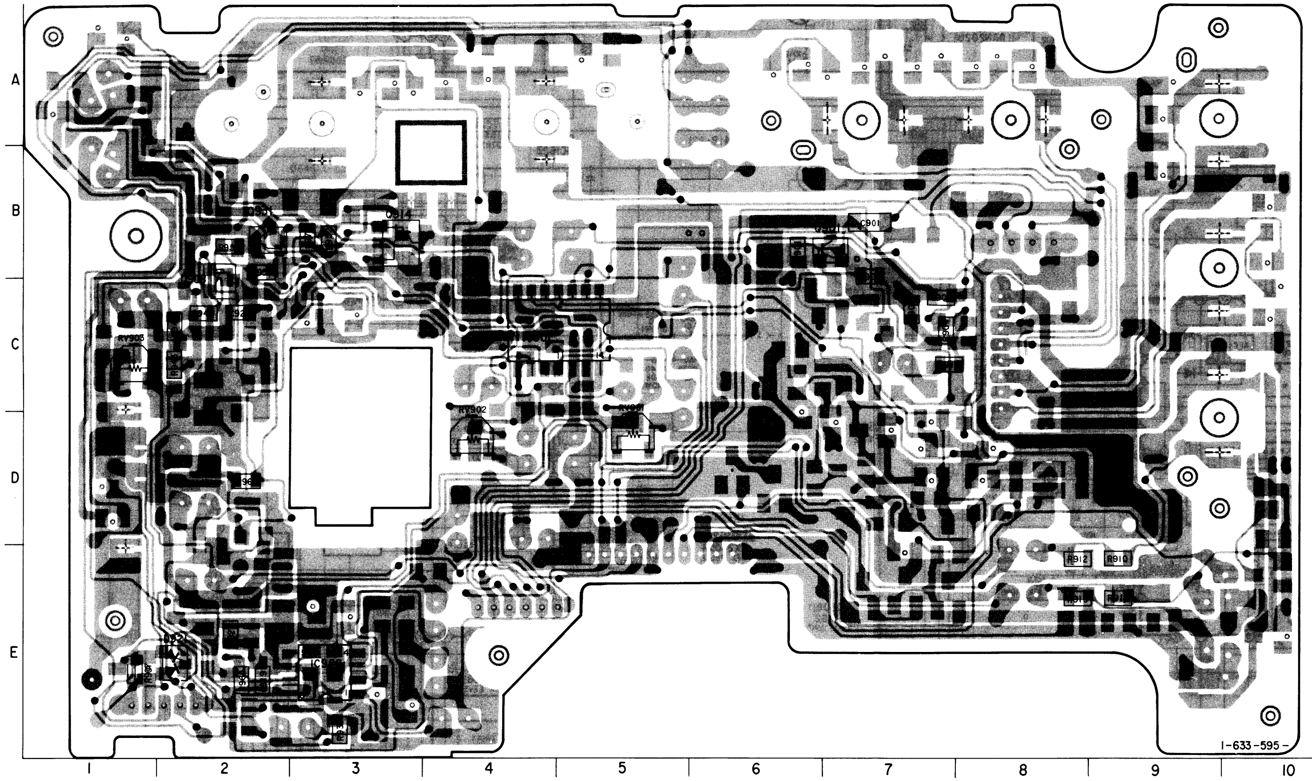
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡≫	➡⋙	
PB	⇨	⇨≫	⇨⋙	

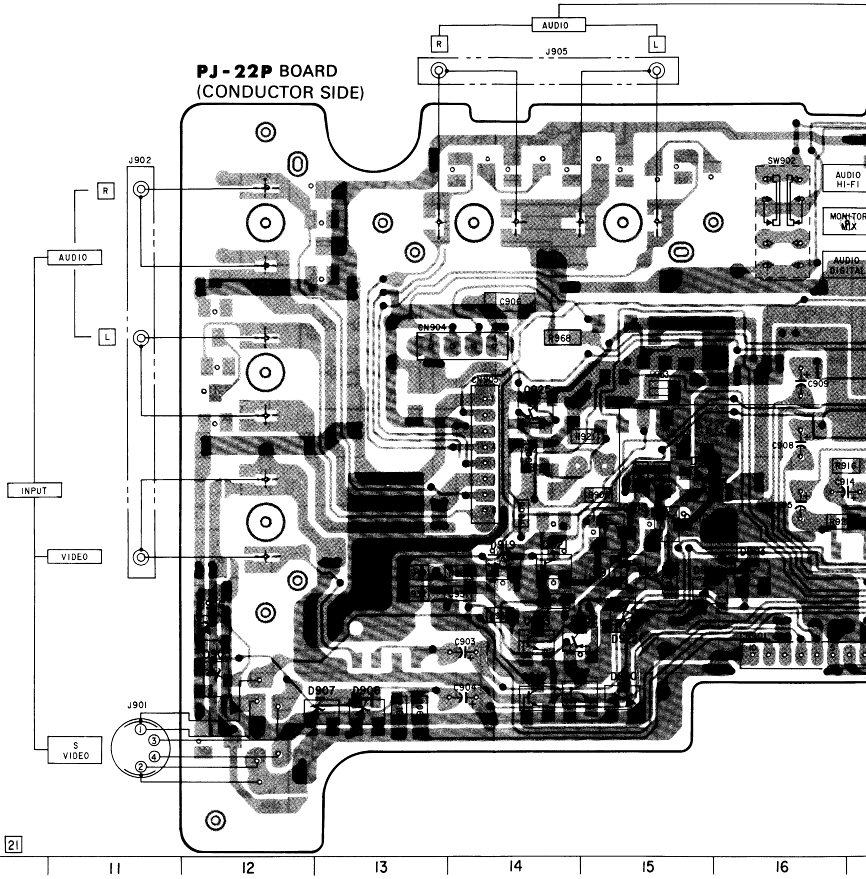
PJ-22P (VIDEO AMP, INPUT/OUTPUT CONNECTOR) PRINTED WIRING BOARDS

— Ref. No. PJ-22P BOARD: 5000 series —

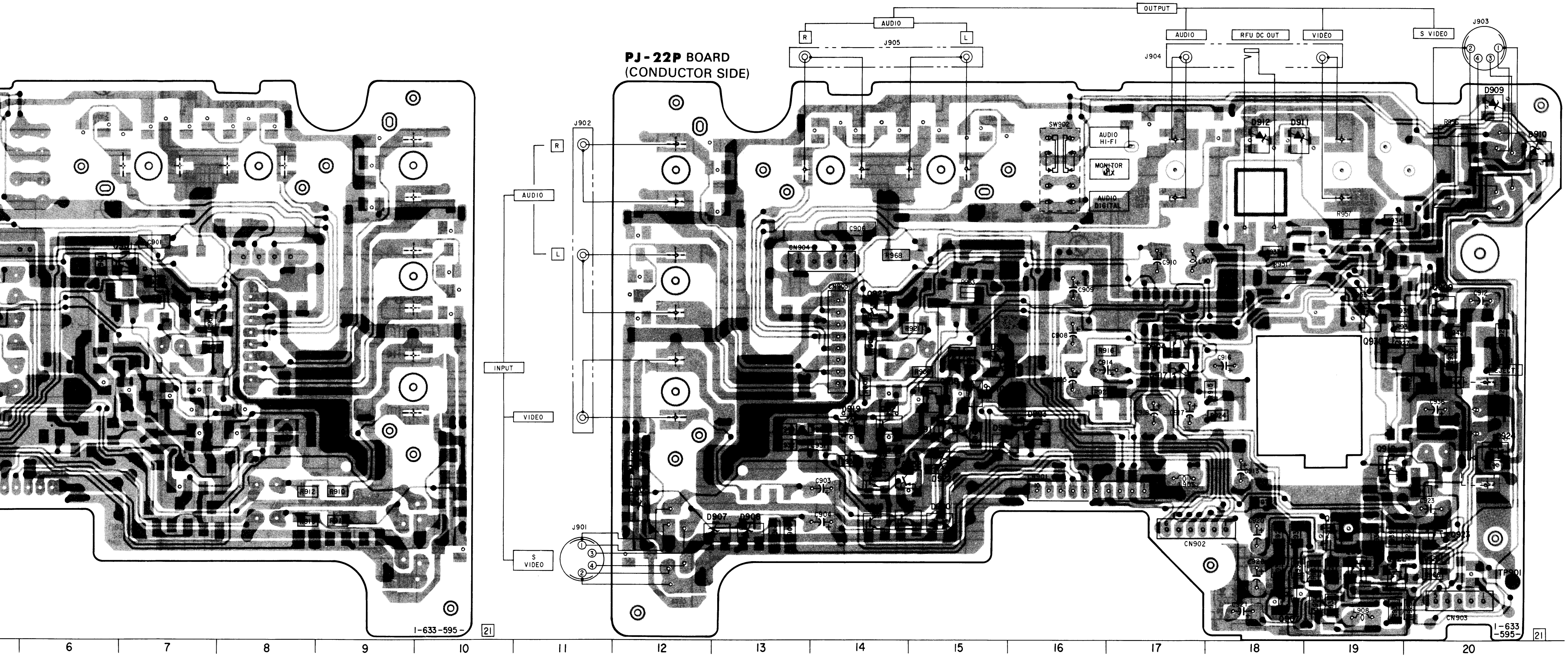
PJ-22P BOARD (COMPONENT SIDE)


A
B
C
D
E
RV903
RV902
RV901
C901
C914
R912
R910
R911
R913
IC901
1-633-595-
21
1
2
3
4
5
6
7
8
9
10

PJ-22P BOARD
(CONDUCTOR SIDE)


AUDIO
R
L
J905
J902
R
AUDIO
L
INPUT
VIDEO
S VIDEO
J901
SW902
AUDIO HI-FI
MONITOR MIX
AUDIO DIGITAL
C906
CN904
R968
C909
C908
R916
C914
C903
C904
D907
D908
11
12
13
14
15
16

PJ-22P BOARD
(CONDUCTOR SIDE)


OUTPUT
AUDIO
R
L
J905
AUDIO
RFU DC OUT
VIDEO
S VIDEO
J904
J903
D909
D910
D912
D911
SW902
AUDIO HI-FI
MONITOR MIX
AUDIO DIGITAL
R957
J902
INPUT
AUDIO
VIDEO
S VIDEO
J901
CN904
C906
R968
C910
C909
C908
R916
C914
C916
C903
C904
D907
D908
CN902
CN903
L908
TP901
C901
R912
R910
1-633-595
21
6
7
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16
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18
19
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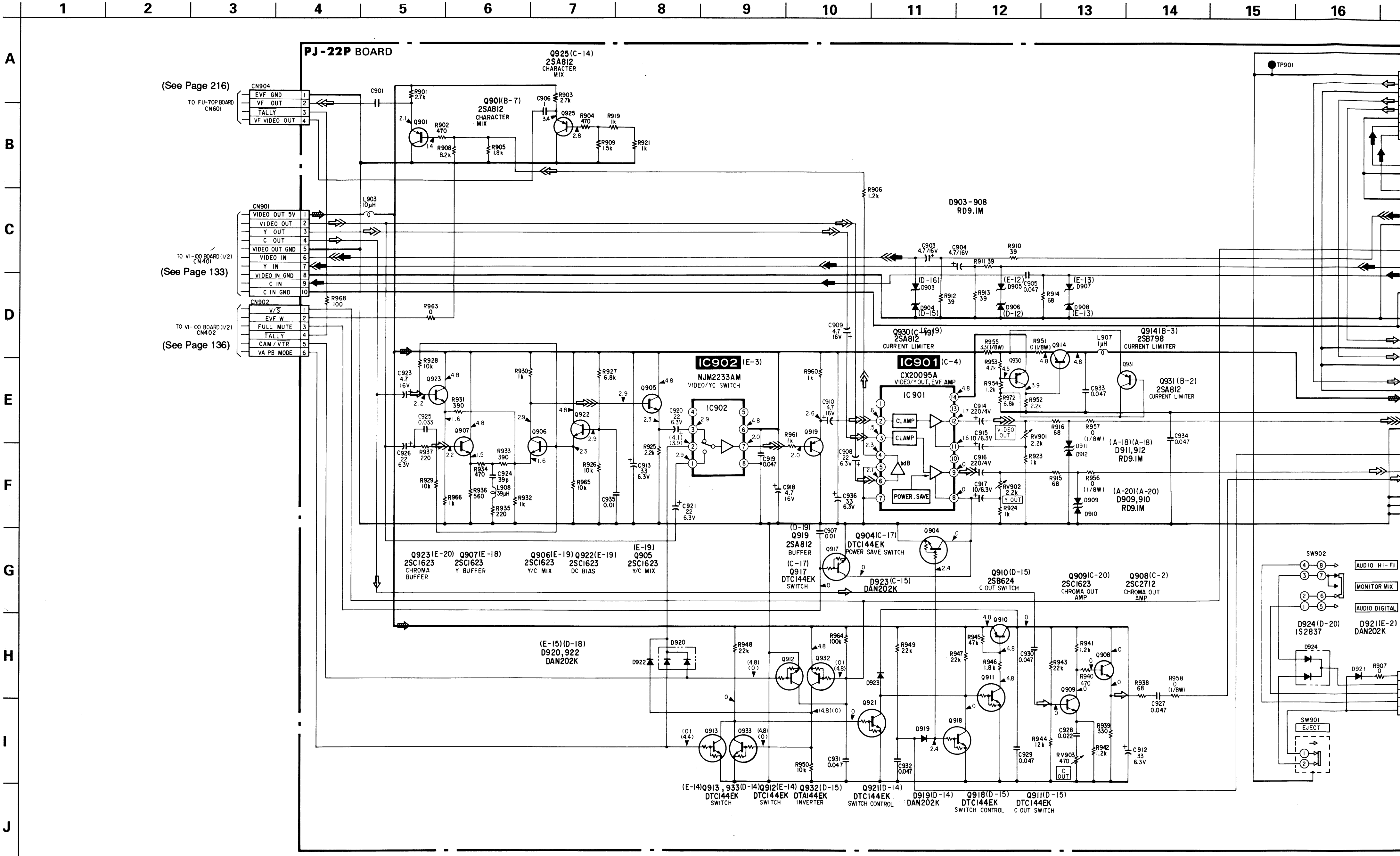
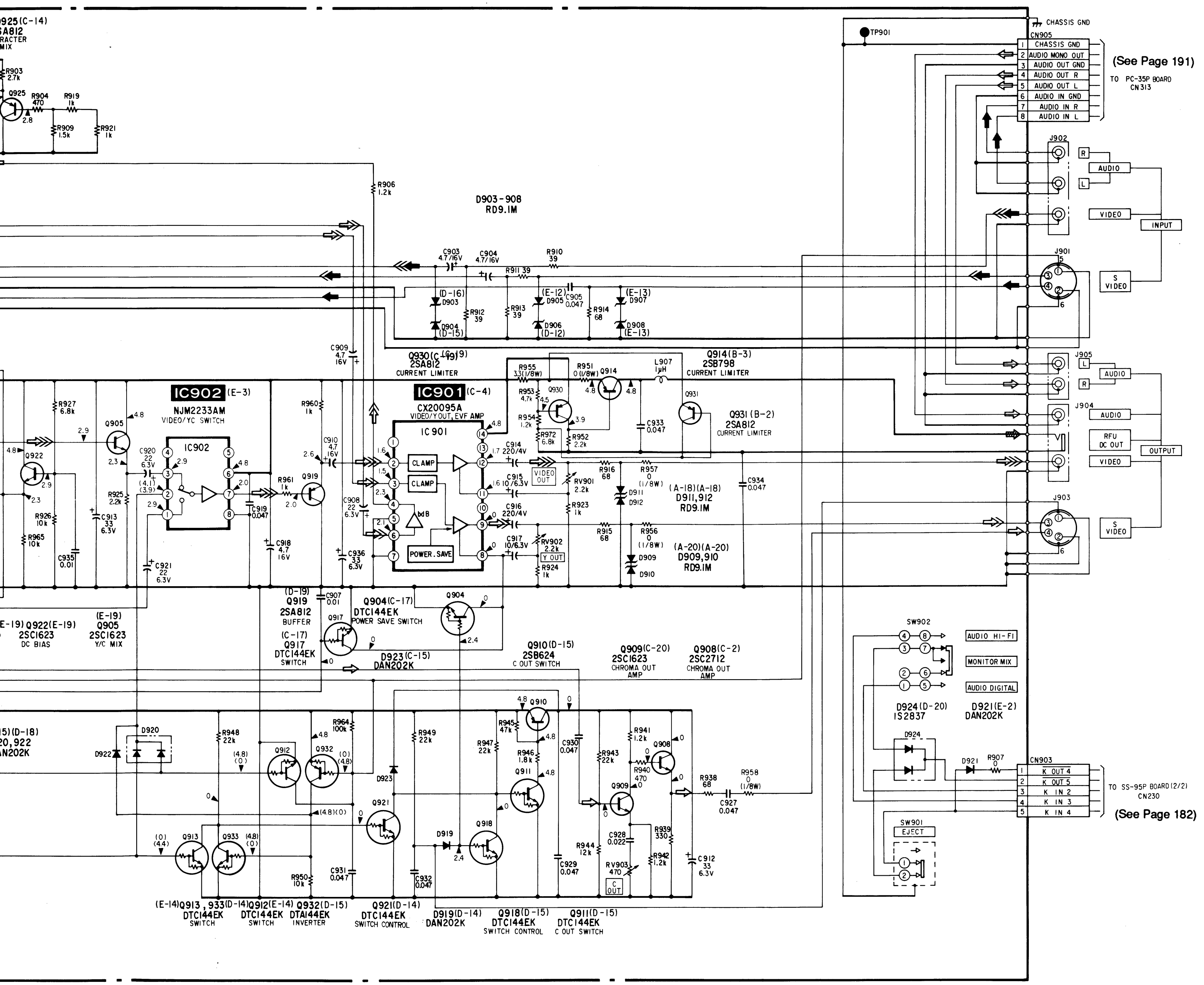

PJ-22P BOARD
(See Page 216)
TO FU-70P BOARD CN601
CN904
EVF GND
VF OUT
TALLY
VF VIDEO OUT
CN901
VIDEO OUT 5V
VIDEO OUT
Y OUT
C OUT
VIDEO OUT GND
VIDEO IN
Y IN
VIDEO IN GND
C IN
C IN GND
TO VI-100 BOARD (1/2) CN401
(See Page 133)
CN902
V/S
EVF W
FULL MUTE
TALLY
CAM/VTR
VA PB MODE
TO VI-100 BOARD (1/2) CN402
(See Page 136)
Q925 (C-14) 2SA812 CHARACTER MIX
Q901 (B-7) 2SA812 CHARACTER MIX
L903 10μH
D903-908 RD9.1M
IC902 (E-3) NJM2233AM VIDEO/YC SWITCH
IC901 (C-4) CX20095A VIDEO/Y OUT, EVF AMP
CLAMP
CLAMP
6dB
POWER. SAVE
VIDEO OUT
Y OUT
C OUT
Q930 (C-19) 2SA812 CURRENT LIMITER
Q914 (B-3) 2SB798 CURRENT LIMITER
Q931 (B-2) 2SA812 CURRENT LIMITER
(A-18) (A-18) D911, 912 RD9.1M
(A-20) (A-20) D909, 910 RD9.1M
Q923 (E-20) 2SC1623 CHROMA BUFFER
Q907 (E-18) 2SC1623 Y BUFFER
Q906 (E-19) 2SC1623 Y/C MIX
Q922 (E-19) 2SC1623 DC BIAS
(E-19) Q905 2SC1623 Y/C MIX
(D-19) Q919 2SA812 BUFFER
(C-17) Q917 DTC144EK SWITCH
Q904 (C-17) DTC144EK POWER SAVE SWITCH
D923 (C-15) DAN202K
Q910 (D-15) 2SB624 C OUT SWITCH
Q909 (C-20) 2SC1623 CHROMA OUT AMP
Q908 (C-2) 2SC2712 CHROMA OUT AMP
(E-15) (D-18) D920, 922 DAN202K
(E-14) Q913, 933 (D-14) DTC144EK SWITCH
Q912 (E-14) DTC144EK SWITCH
Q932 (D-15) DTA144EK INVERTER
Q921 (D-14) DTC144EK SWITCH CONTROL
D919 (D-14) DAN202K
Q918 (D-15) DTC144EK SWITCH CONTROL
Q911 (D-15) DTC144EK C OUT SWITCH
TP901
SW902
AUDIO HI-FI
MONITOR MIX
AUDIO DIGITAL
D924 (D-20) 1S2837
D921 (E-2) DAN202K
SW901 EJECT
RV901 2.2k
RV902 2.2k
RV903 470
L907 1μH
L908 39μH
R901 2.7k
R903 2.7k
R902 470
R904 470
R919 1k
R905 1.8k
R908 8.2k
R909 1.5k
R921 1k
R906 1.2k
R910 39
R911 39
R912 39
R913 39
R914 68
R968 100
R963 0
C901
C906
C903 4.7/16V
C904 4.7/16V
C905 0.047
C909 4.7 16V

7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22


Q925(C-14) 2SA812 CHARACTER MIX
R903 2.7k
Q925
R904 470
R919 1k
R909 1.5k
R921 1k
R906 1.2k
D903-908 RD9.1M
C903 4.7/16V
C904 4.7/16V
R911 39
R910 39
D903 (D-16)
R912 39
R913 39
D905 (E-12)
C905 0.047
R914 68
D907 (E-13)
D904 (D-15)
D906 (D-12)
D908 (E-13)
C909 4.7 16V
Q930(C-19) 2SA812 CURRENT LIMITER
R955 3.3(1/8W)
R951 0(1/8W)
Q914
L907 1μH
Q914(B-3) 2SB798 CURRENT LIMITER
IC902 (E-3)
NJM2233AM VIDEO/YC SWITCH
IC901 (C-4)
CX20095A VIDEO/Y OUT, EVF AMP
R927 6.8k
Q905
Q922
C920 22 6.3V
IC902
R925 2.2k
C913 33 6.3V
R926 10k
R965 10k
C935 0.01
C921 22 6.3V
C919 0.047
C918 4.7 16V
R960 1k
R961 1k
Q919
C910 4.7 16V
C908 22 6.3V
C936 33 6.3V
IC901
CLAMP
CLAMP
6dB
POWER.SAVE
R953 4.7k
R954 1.2k
Q930
R972 6.8k
R952 2.2k
C933 0.047
Q931
Q931 (B-2) 2SA812 CURRENT LIMITER
C914 220/4V
C915 10/6.3V
VIDEO OUT
RV901 2.2k
R923 1k
R916 68
R957 0 (1/8W)
D911
D912
(A-18)(A-18) D911,912 RD9.1M
C934 0.047
C916 220/4V
C917 10/6.3V
RV902 2.2k
Y OUT
R924 1k
R915 68
R956 0 (1/8W)
D909
D910
(A-20)(A-20) D909,910 RD9.1M
(D-19) Q919 2SA812 BUFFER
C907 0.01
Q904(C-17) DTC144EK POWER SAVE SWITCH
Q904
Q917
(C-17) Q917 DTC144EK SWITCH
D923(C-15) DAN202K
(E-19) Q922(E-19) 2SC1623 DC BIAS
(E-19) Q905 2SC1623 Y/C MIX
Q910(D-15) 2SB624 C OUT SWITCH
Q909(C-20) 2SC1623 CHROMA OUT AMP
Q908(C-2) 2SC2712 CHROMA OUT AMP
D920
D922
R948 22k
Q912
Q932
R964 100k
R949 22k
D923
Q921
R947 22k
R945 47k
Q910
R946 1.8k
Q911
C930 0.047
R943 22k
R941 1.2k
Q908
R940 470
Q909
R938 68
R958 0 (1/8W)
C927 0.047
D919
Q918
R944 12k
C928 0.022
RV903 470
C OUT
R939 330
R942 1.2k
C912 33 6.3V
C929 0.047
C932 0.047
C931 0.047
R950 10k
Q913
Q933
(15)(D-18) 20,922 DAN202K
(E-14)Q913, 933(D-14) DTC144EK SWITCH
Q912(E-14) DTC144EK SWITCH
Q932(D-15) DTA144EK INVERTER
Q921(D-14) DTC144EK SWITCH CONTROL
D919(D-14) DAN202K
Q918(D-15) DTC144EK SWITCH CONTROL
Q911(D-15) DTC144EK C OUT SWITCH
TP901
CHASSIS GND
CN905
1 CHASSIS GND
2 AUDIO MONO OUT
3 AUDIO OUT GND
4 AUDIO OUT R
5 AUDIO OUT L
6 AUDIO IN GND
7 AUDIO IN R
8 AUDIO IN L
(See Page 191)
TO PC-35P BOARD CN313
J902
R
L
AUDIO
VIDEO
INPUT
J901
S VIDEO
J905
L
R
AUDIO
J904
AUDIO
RFU DC OUT
OUTPUT
VIDEO
J903
S VIDEO
SW902
AUDIO HI-FI
MONITOR MIX
AUDIO DIGITAL
D924(D-20) 1S2837
D921(E-2) DAN202K
D924
D921
R907 0
CN903
1 K OUT 4
2 K OUT 5
3 K IN 2
4 K IN 3
5 K IN 4
TO SS-95P BOARD (2/2) CN230
(See Page 182)
SW901 EJECT

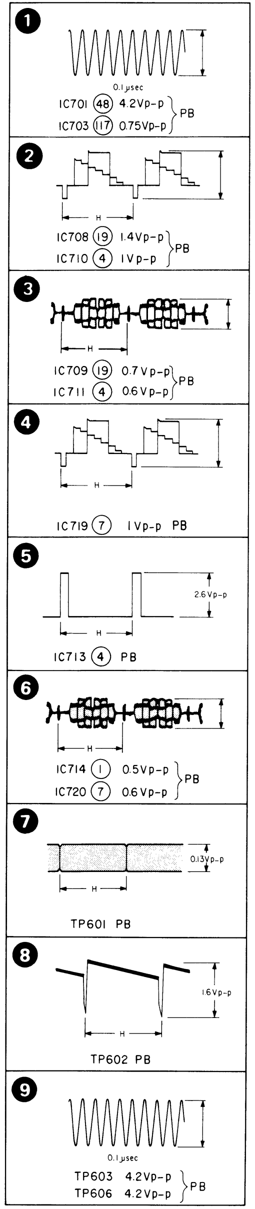
- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡➡	➡➡➡	➡
PB	⇨	⇨⇨	⇨⇨⇨	⇨

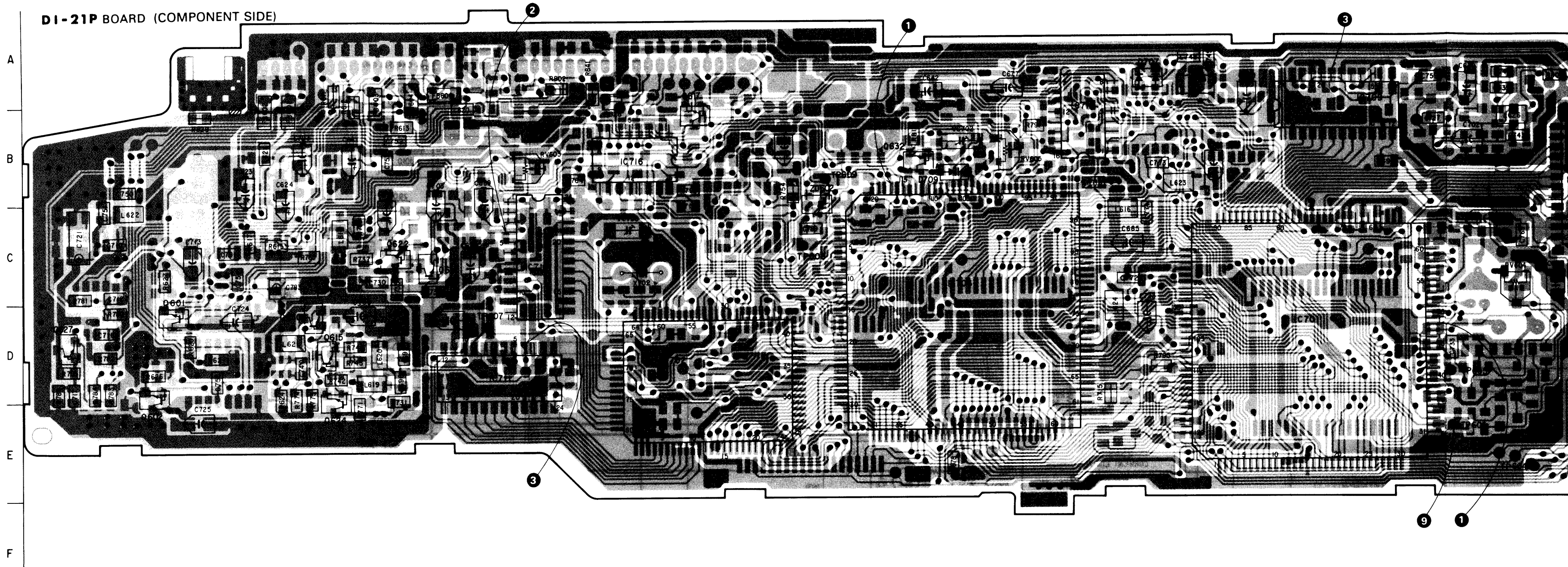
- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.

— Ref. No. DI-21P BOARD: 5000 series —

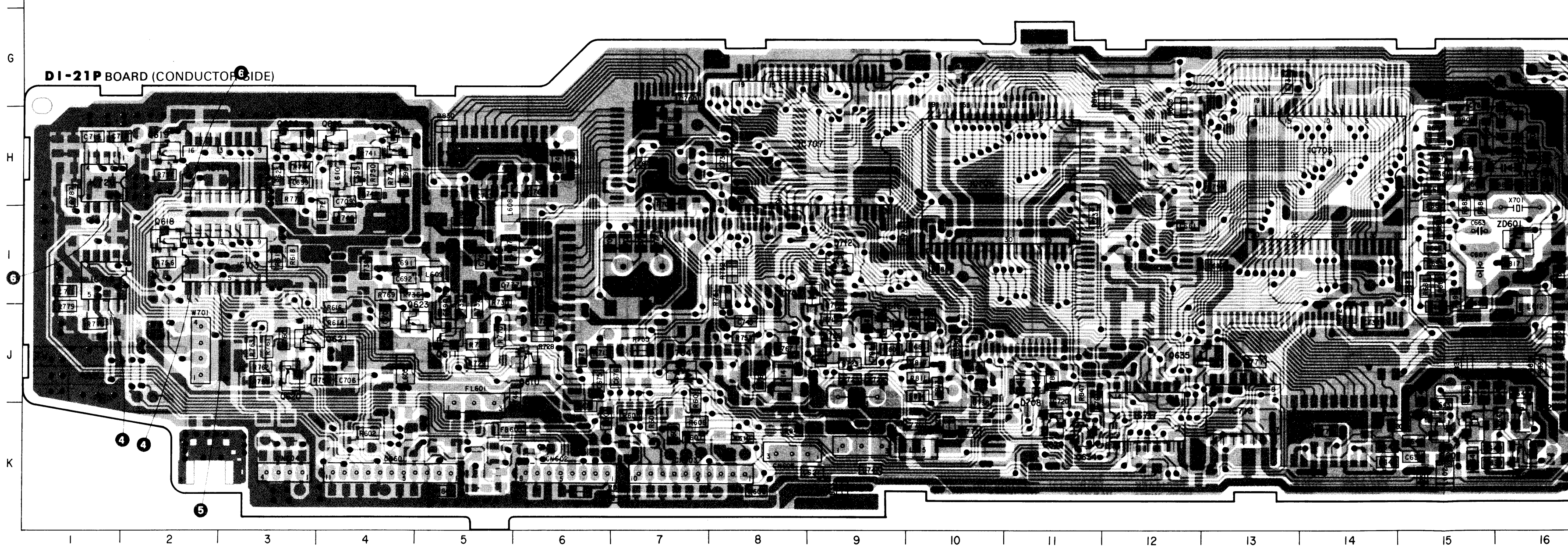
DI-21P BOARD

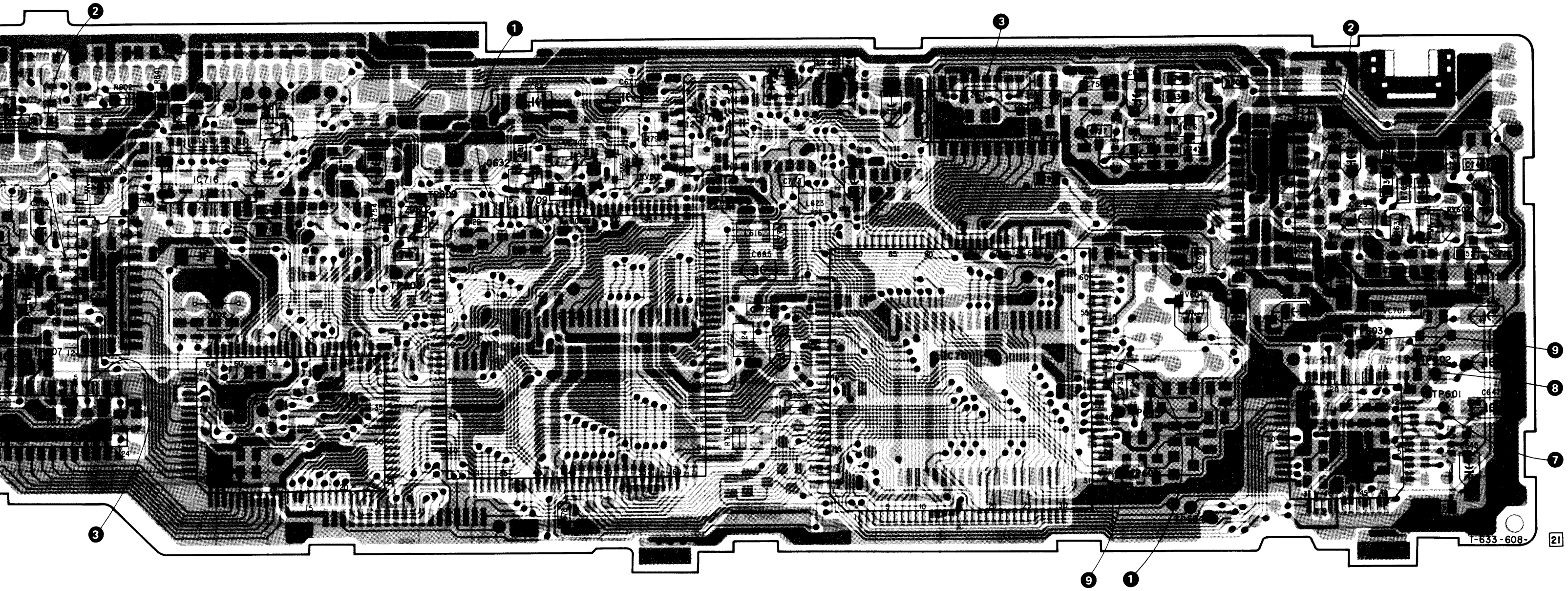


DI-21P BOARD (COMPONENT SIDE)

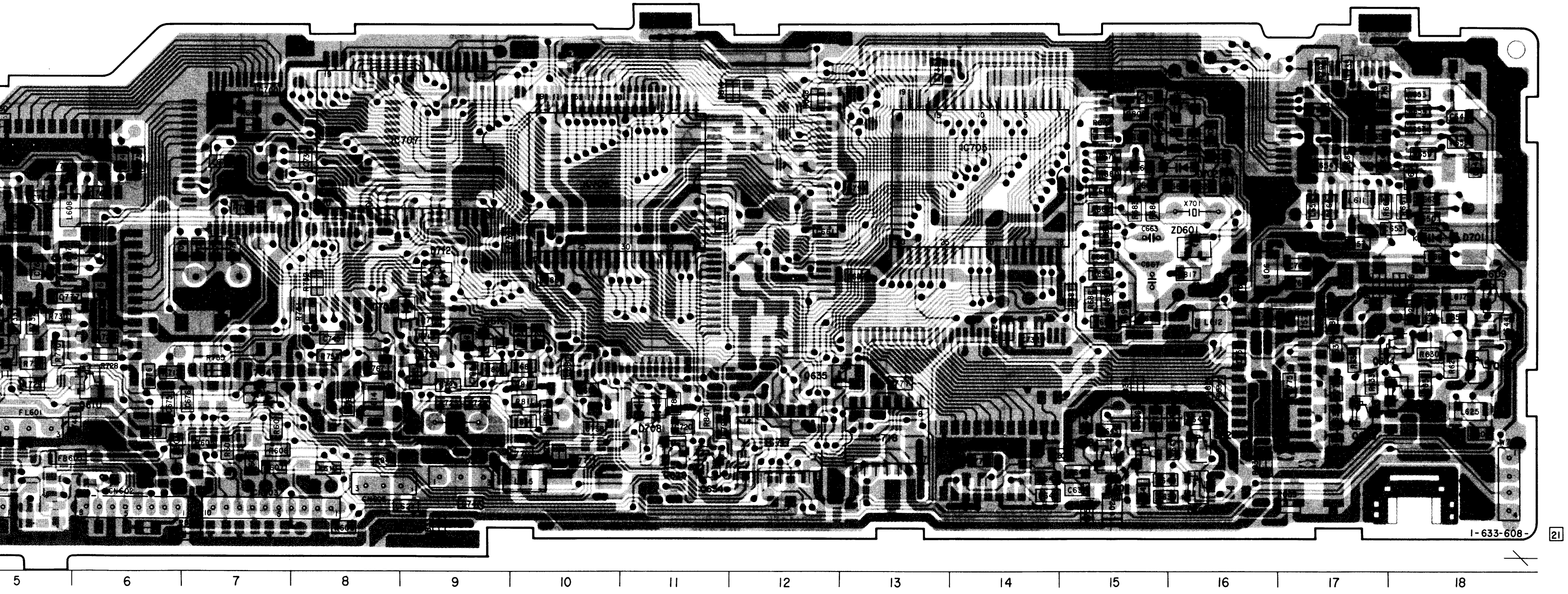

A
B
C
D
E
F
❶
❷
❸
❾
IC716
IC707
IC709
IC701
Q632
D709
L622
C724
C725
Q601
Q615
L619

DI-21P BOARD (CONDUCTOR SIDE)


G
H
I
J
K
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
❹
❺
❻
IC707
IC706
Q618
W701
FL601
CN602
X701
ZD601
D708
Q635
Q620
Q623



❷
❶
❸
❷
IC716
Q632
D709
IC701
TP601
❾
❽
❼
❸
❾
❶
1-633-608-
21

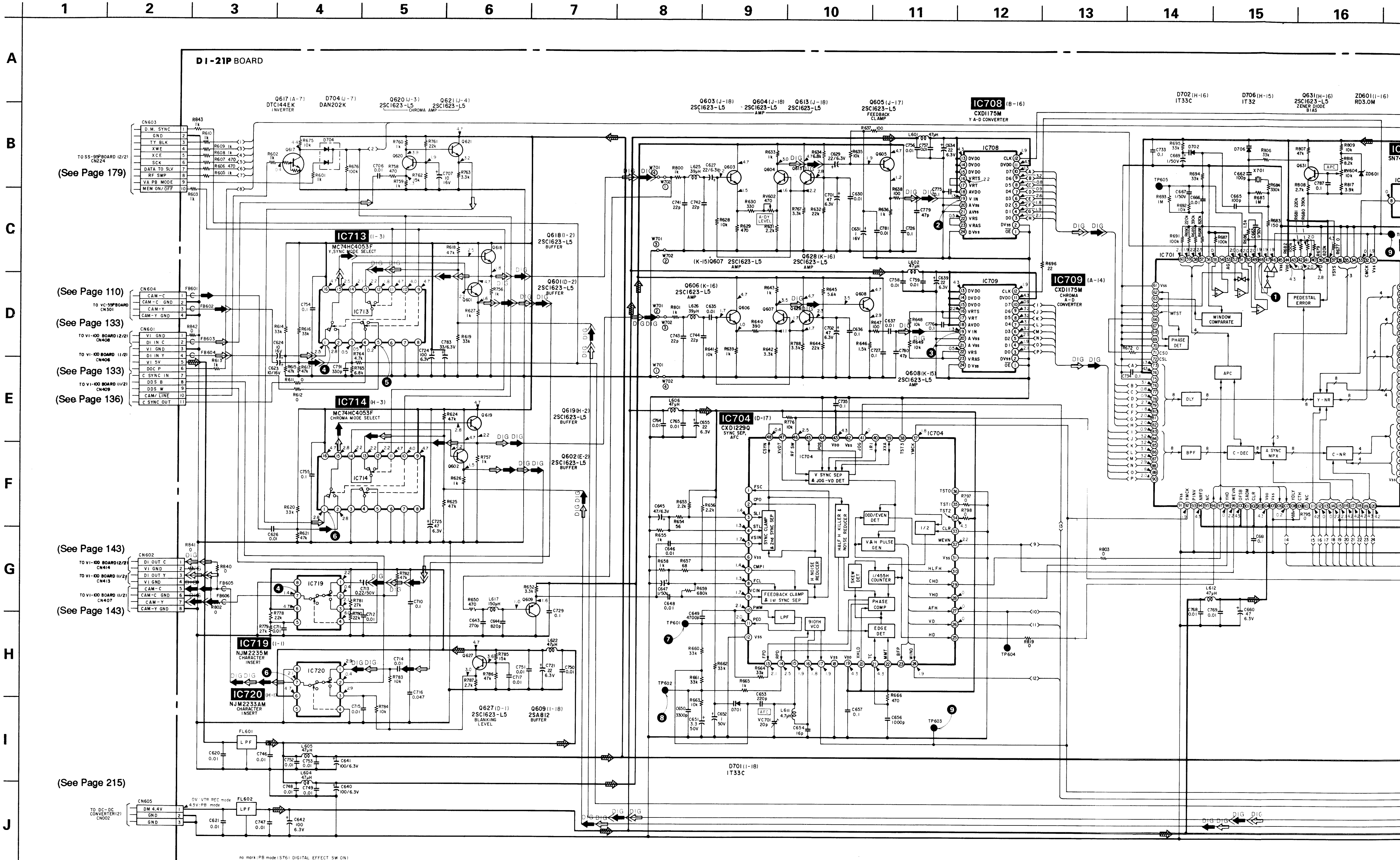


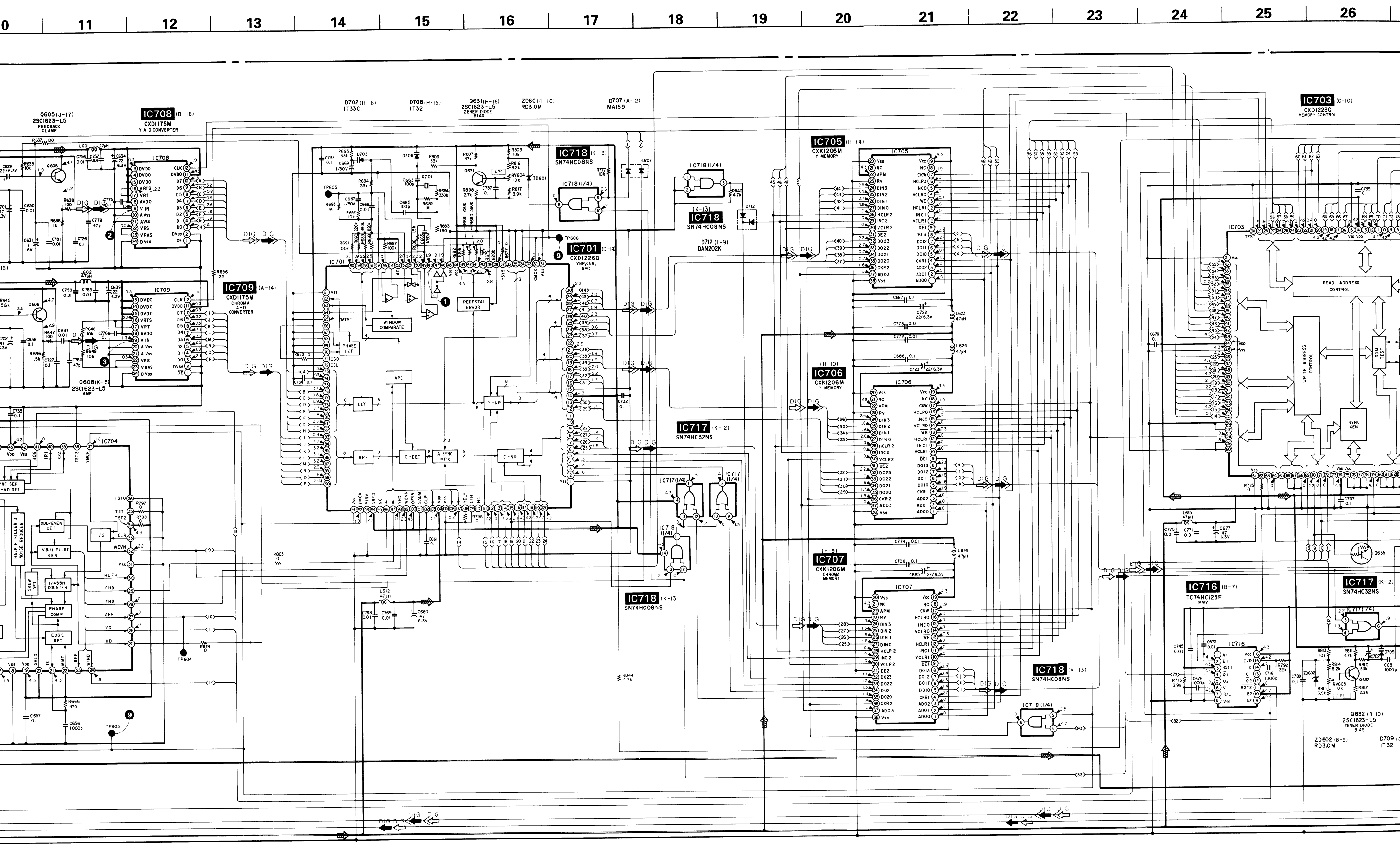
IC707
IC706
X701
ZD601
D701
FL601
CN602
D708
1-633-608-
21
5
6
7
8
9
10
11
12
13
14
15
16
17
18

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	⇛		
PB	⇨	⇨⇨		

position of location address on the printed wiring board.


DI-21P BOARD
Q617 (A-7) DTC144EK INVERTER
D704 (J-7) DAN202K
Q620 (J-3) 2SC1623-L5
Q621 (J-4) 2SC1623-L5
CHROMA AMP
Q603 (J-18) 2SC1623-L5
Q604 (J-18) 2SC1623-L5
Q613 (J-18) 2SC1623-L5
AMP
Q605 (J-17) 2SC1623-L5 FEEDBACK CLAMP
IC708 (B-16) CXD1175M Y A-D CONVERTER
D702 (H-16) 1T33C
D706 (H-15) 1T32
Q631 (H-16) 2SC1623-L5 ZENER DIODE BIAS
ZD601 (I-16) RD3.0M
CN603
D.M. SYNC
GND
TY BLK
XWE
XCE
SCK
DATA TO SLV
RF SWP
VA PB MODE
MEM ON/OFF
TO SS-95P BOARD (2/2) CN224
(See Page 179)
IC713 (I-3) MC74HC4053F Y, SYNC MODE SELECT
Q618 (I-2) 2SC1623-L5 BUFFER
Q601 (D-2) 2SC1623-L5 BUFFER
(See Page 110)
CN604
CAM-C
CAM-C GND
CAM-Y
CAM-Y GND
TO VC-55P BOARD CN301
(See Page 133)
CN601
VI GND
DI IN C
VI GND
DI IN Y
VI 5V
DOC P
C SYNC IN
DDS B
DDS W
CAM/LINE
C SYNC OUT
TO VI-100 BOARD (2/2) CN408
TO VI-100 BOARD (1/2) CN406
(See Page 133)
TO VI-100 BOARD (1/2) CN409
(See Page 136)
IC714 (H-3) MC74HC4053F CHROMA MODE SELECT
Q619 (H-2) 2SC1623-L5 BUFFER
Q602 (E-2) 2SC1623-L5 BUFFER
Q606 (K-16) 2SC1623-L5 AMP
Q607 (K-15) 2SC1623-L5 AMP
Q628 (K-16) 2SC1623-L5 AMP
Q608 (K-15) 2SC1623-L5 AMP
IC709 (A-14) CXD1175M CHROMA A-D CONVERTER
IC701
A-DY LEVEL
WINDOW COMPARATE
PEDESTAL ERROR
PHASE DET
APC
DLY
Y-NR
BPF
C-DEC
4 SYNC MPX
C-NR
MTST
IC704 (D-17) CXD1229Q SYNC SEP, AFC
V SYNC SEP & JOG-VD DET
SYNC CLAMP & 2nd SYNC SEP
HALF H KILLER & NOISE REDUCER
ODD/EVEN DET
V & H PULSE GEN
H NOISE REDUCER
SKEW DET
1/455H COUNTER
PHASE COMP
EDGE DET
FEEDBACK CLAMP & 1st SYNC SEP
LPF
910fH VCO
1/2
FSC
CPO
SLI
STL
VSIN
CMPI
FCL
VCIN
PWM
PEO
TSTO
TST1
TST2
CLR
WEVN
HLFH
CHD
YHD
AFH
VD
HD
TP601
TP602
TP603
TP604
TP605
(See Page 143)
CN602
DI OUT C
VI GND
DI OUT Y
VI GND
CAM-C
CAM-C GND
CAM-Y
CAM-Y GND
TO VI-100 BOARD (2/2) CN414
TO VI-100 BOARD (1/2) CN413
TO VI-100 BOARD (1/2) CN407
(See Page 143)
IC719 (I-1) NJM2235M CHARACTER INSERT
IC720 (H-1) NJM2233AM CHARACTER INSERT
Q627 (D-1) 2SC1623-L5 BLANKING LEVEL
Q609 (I-18) 2SA812 BUFFER
FL601 LPF
D701 (I-18) 1T33C
(See Page 215)
CN605
DM 4.4V
GND
GND
TO DC-DC CONVERTER (2) CN002
0V: VTR REC mode
4.3V: PB mode
FL602 LPF
DIG
no mark: PB mode (S761 DIGITAL EFFECT SW ON)


11
12
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17
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23
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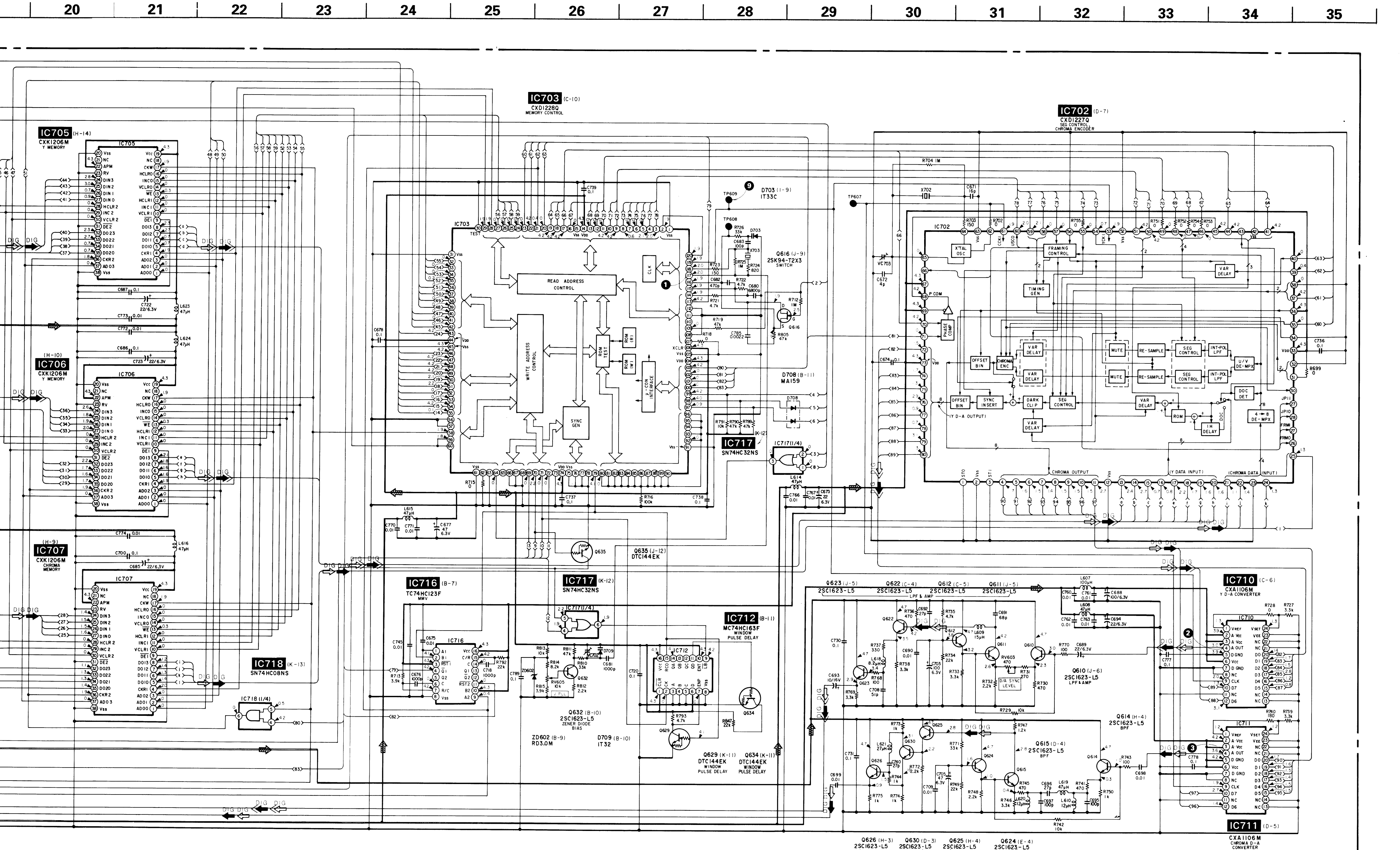
26
Q605 (J-17)
2SC1623-L5
FEEDBACK CLAMP
IC708 (B-16)
CXD1175M
Y A-D CONVERTER
IC709 (A-14)
CXD1175M
CHROMA A-D CONVERTER
Q608 (K-15)
2SC1623-L5
AMP
D702 (H-16)
IT33C
D706 (H-15)
IT32
Q631 (H-16)
2SC1623-L5
ZENER DIODE BIAS
ZD601 (I-16)
RD3.0M
D707 (A-12)
MA159
IC718 (K-13)
SN74HC08NS
IC718 (1/4)
IC701 (D-14)
CXD1226Q
YNR, CNR, APC
TP605
TP606
WINDOW COMPARATE
PHASE DET
APC
DLY
BPF
C-DEC
A SYNC MPX
Y-NR
C-NR
PEDESTAL ERROR
D712 (I-9)
DAN202K
IC717 (K-12)
SN74HC32NS
IC717 (1/4)
IC705 (H-14)
CXK1206M
Y MEMORY
IC706 (H-10)
CXK1206M
Y MEMORY
IC707 (H-9)
CXK1206M
CHROMA MEMORY
IC703 (C-10)
CXD1228Q
MEMORY CONTROL
READ ADDRESS CONTROL
WRITE ADDRESS CONTROL
SYNC GEN
ROM TEST
IC716 (B-7)
TC74HC123F
MMV
Q635
Q632 (B-10)
2SC1623-L5
ZENER DIODE BIAS
ZD602 (B-9)
RD3.0M
D709
IT32
IC704
SYNC SEP
-VD DET
HALF H KILLER & NOISE REDUCER
ODD/EVEN DET
V & H PULSE GEN
1/2
SKEW DET
1/455H COUNTER
PHASE COMP
EDGE DET
TP603
TP604
DIG


20
21
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26
27
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29
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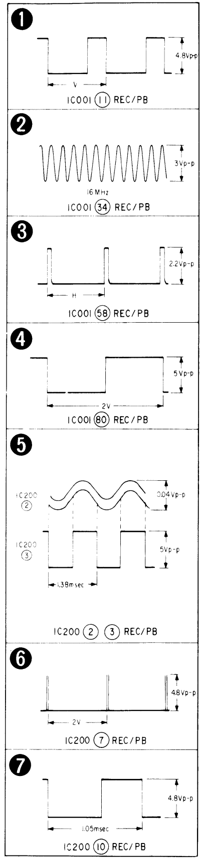
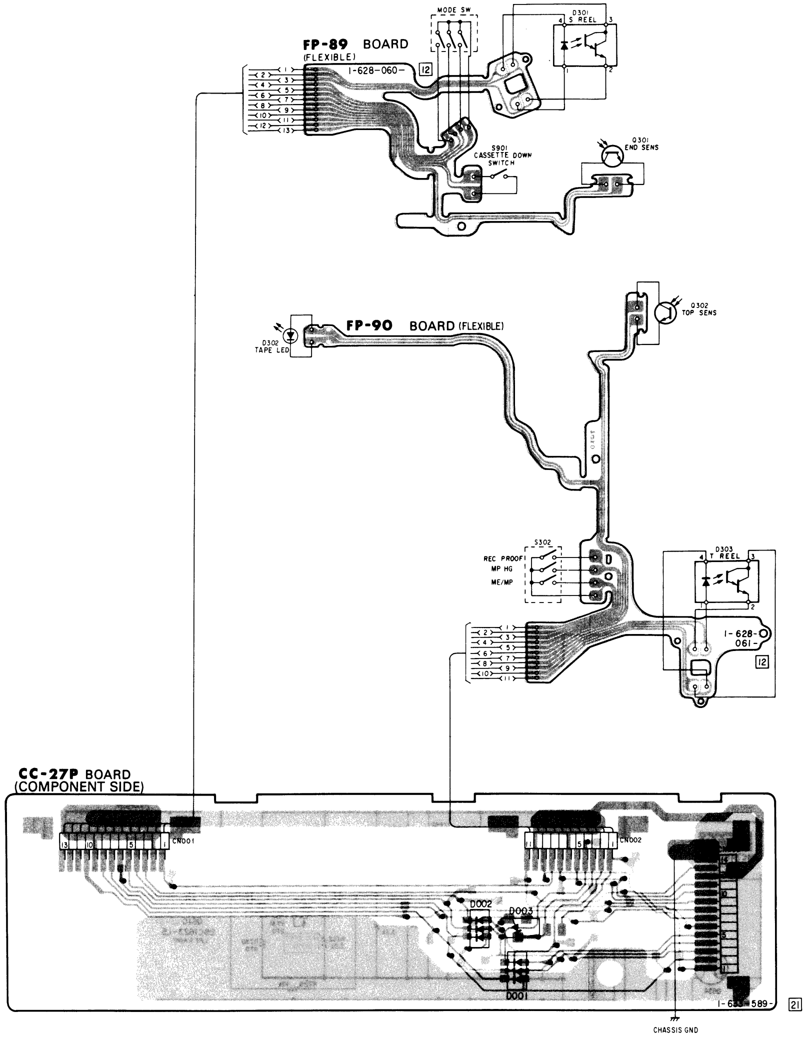
33
34
35
IC705 (H-14)
CXK1206M
Y MEMORY
IC706 (H-10)
CXK1206M
Y MEMORY
IC707 (H-9)
CXK1206M
CHROMA MEMORY
IC703 (C-10)
CXD1228Q
MEMORY CONTROL
READ ADDRESS CONTROL
WRITE ADDRESS CONTROL
CLK
ROM TEST
ROM (R)
ROM (W)
μ-COM INTERFACE
SYNC GEN
IC702 (D-7)
CXD1227Q
SEG CONTROL
CHROMA ENCODER
X'TAL OSC
FRAMING CONTROL
TIMING GEN
VAR DELAY
PHASE COMP
OFFSET BIN
CHROMA ENC
SYNC INSERT
DARK CLIP
SEG CONTROL
MUTE
RE-SAMPLE
INT-POL LPF
U/V DE-MPX
DOC DET
4→8 DE-MPX
1H DELAY
ROM
CHROMA OUTPUT
(Y DATA INPUT)
(CHROMA DATA INPUT)
(Y D-A OUTPUT)
D703 (I-9)
1T33C
Q616 (J-9)
2SK94-T2X3
SWITCH
TP607
TP608
TP609
D708 (B-11)
MA159
IC717 (K-12)
SN74HC32NS
IC717 (1/4)
IC716 (B-7)
TC74HC123F
MMV
IC718 (K-13)
SN74HC08NS
IC718 (1/4)
IC712 (B-11)
MC74HC163F
WINDOW PULSE DELAY
Q635 (J-12)
DTC144EK
Q632 (B-10)
2SC1623-L5
ZENER DIODE BIAS
ZD602 (B-9)
RD3.0M
D709 (B-10)
1T32
Q629 (K-11)
DTC144EK
WINDOW PULSE DELAY
Q634 (K-11)
DTC144EK
WINDOW PULSE DELAY
Q623 (J-5)
2SC1623-L5
Q622 (C-4)
2SC1623-L5
LPF & AMP
Q612 (C-5)
2SC1623-L5
Q611 (J-5)
2SC1623-L5
Q610 (J-6)
2SC1623-L5
LPF & AMP
Q614 (H-4)
2SC1623-L5
BPF
Q615 (D-4)
2SC1623-L5
BPF
Q626 (H-3)
2SC1623-L5
Q630 (D-3)
2SC1623-L5
Q625 (H-4)
2SC1623-L5
Q624 (E-4)
2SC1623-L5
D/A SYNC LEVEL
IC710 (C-6)
CXA1106M
Y D-A CONVERTER
IC711 (D-5)
CXA1106M
CHROMA D-A CONVERTER
DIG

SS-95P (SERVO/SYSTEM CONTROL,TITLER), CC-27P (REALAY), FP-89 (MODE SW, TAPE END SENSOR), FP-90 (TAPE SELECT, TAPE TOP SENSOR) PRINTED WIRING BOARDS

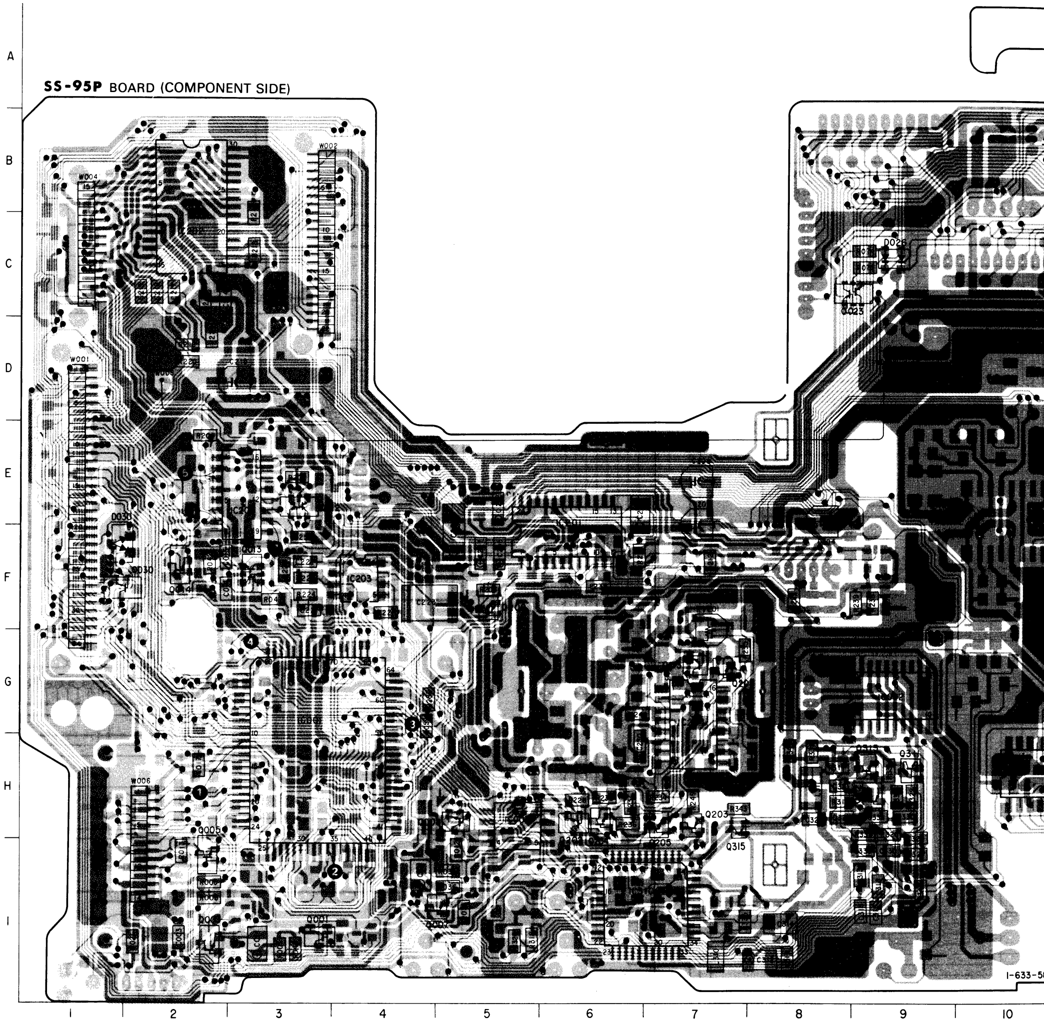
— Ref. No. SS-95P BOARD: 5000 series, CC-27P BOARD: 6000 series, FP-89 BOARD: 7000 series, FP-90 BOARD: 8000 series —

SS-95P BOARD (1/2)





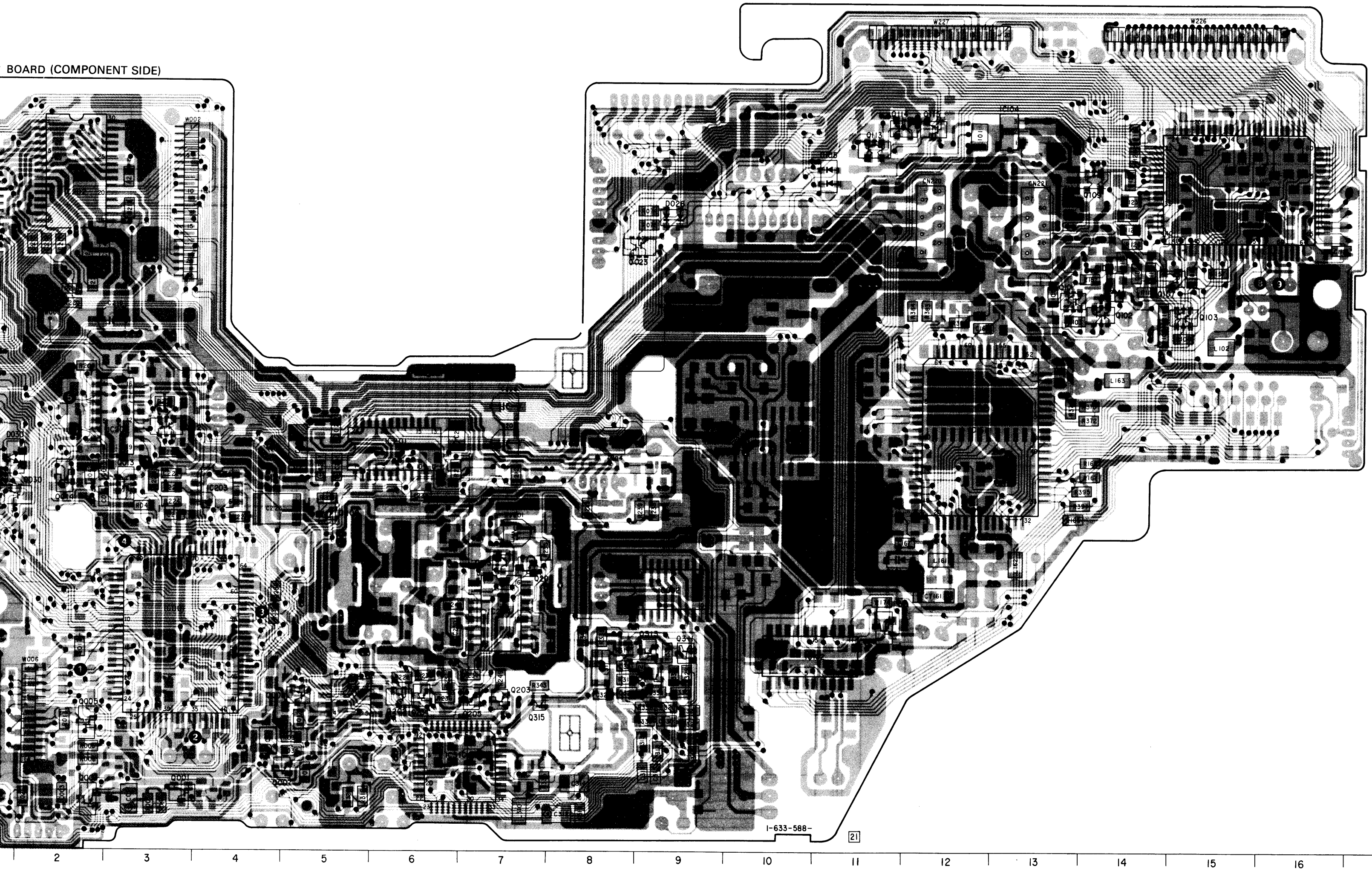
FP-89 BOARD
(FLEXIBLE)
1-628-060-
12
MODE SW
D301
S REEL
S901
CASSETTE DOWN SWITCH
Q301
END SENS
FP-90 BOARD (FLEXIBLE)
D302
TAPE LED
Q302
TOP SENS
S302
REC PROOF
MP HG
ME/MP
D303
T REEL
1-628-061-
12
CC-27P BOARD
(COMPONENT SIDE)
CN001
CN002
D002
D003
D001
1-633-589-
21
CHASSIS GND



SS-95P BOARD (COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
W004
W002
W001
W006
D030
D026
Q025
Q203
Q315
Q005
Q001
1-633-5

SENSOR) PRINTED WIRING BOARDS

BOARD (COMPONENT SIDE)


W227
W226
W002
W006
D026
Q025
Q101
Q103
Q104
Q203
Q315
CN221
L102
L161
L163
1-633-588-
21
2
3
4
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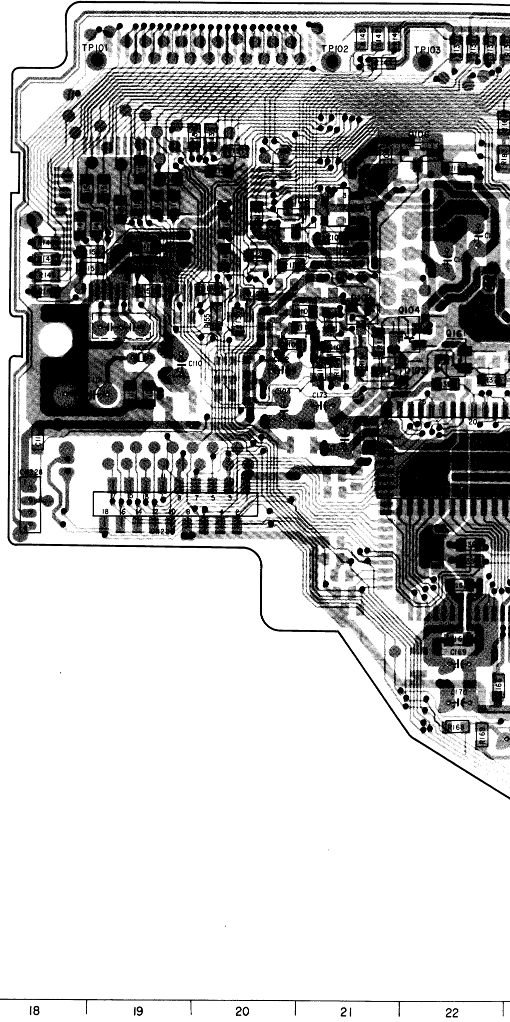
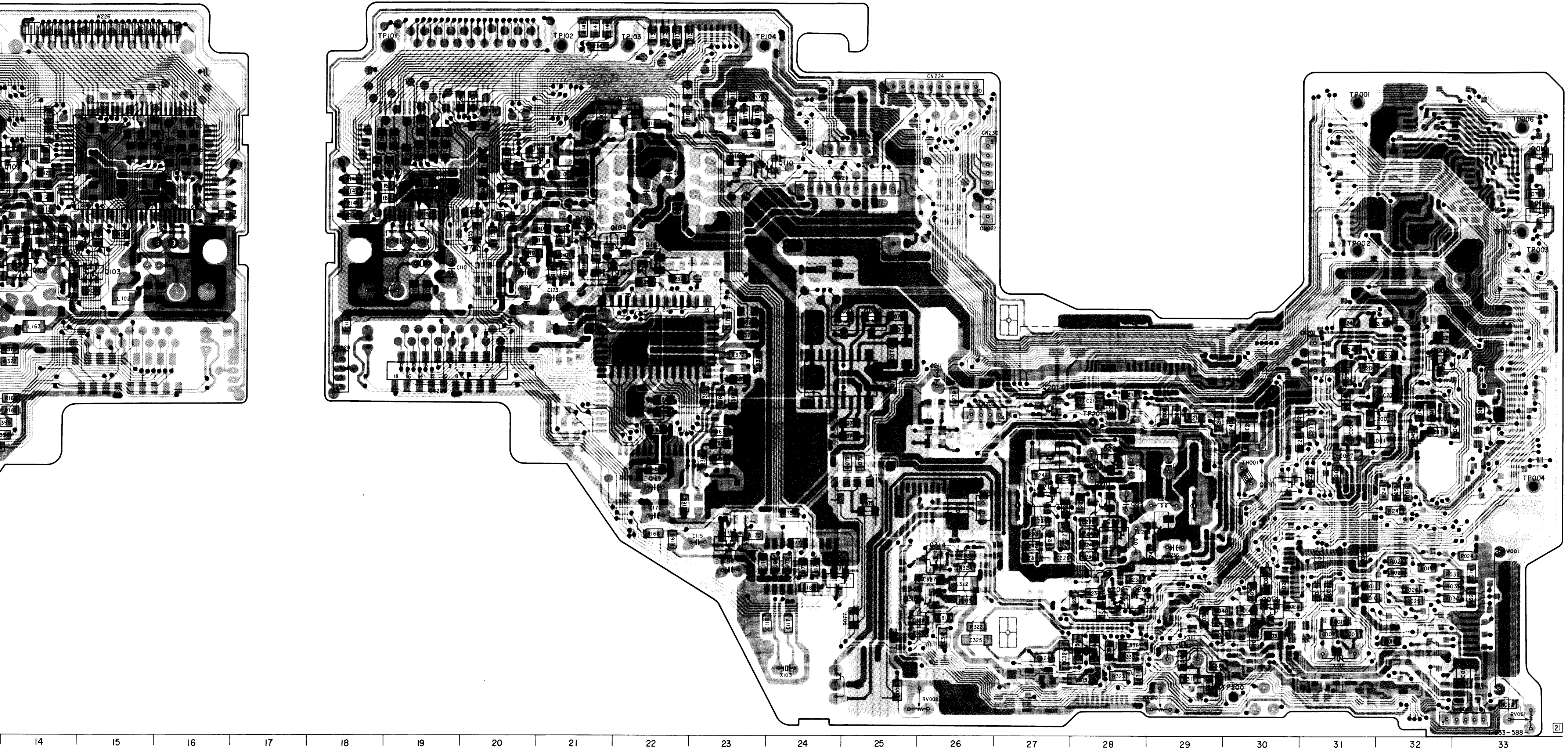
15
16
17

SS-95P BOARD (CONDUCTOR SIDE)


TP101
TP102
TP103
Q104
C110
18
19
20
21
22

SS-95P BOARD (CONDUCTOR SIDE)


W226
TP101
TP102
TP103
TP104
CN224
CN230
TP001
TP006
TP002
TP005
TP003
TP004
TP201
TP200
RV002
RV001
W001
X103
14
15
16
17
18
19
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21
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23
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25
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28
29
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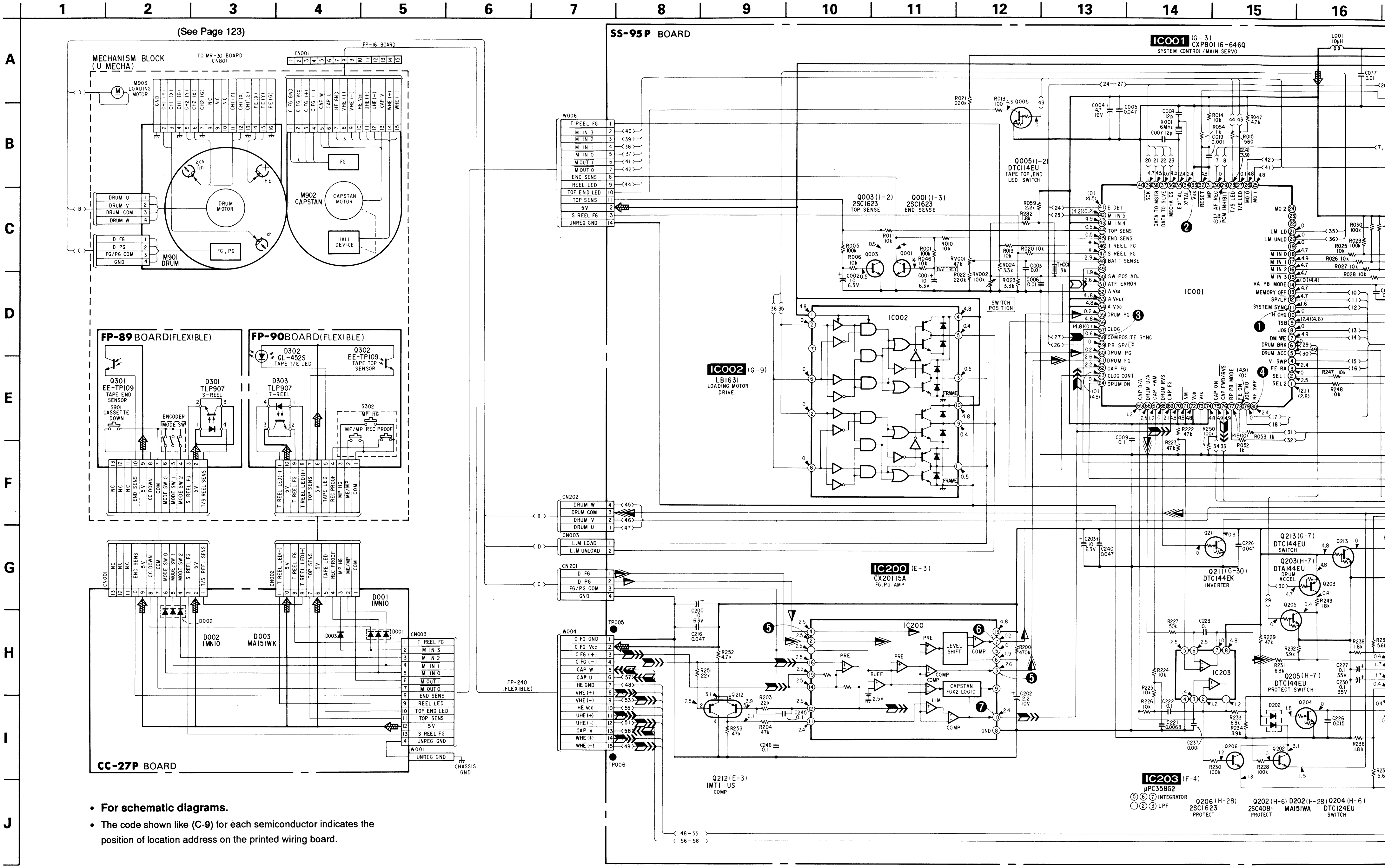
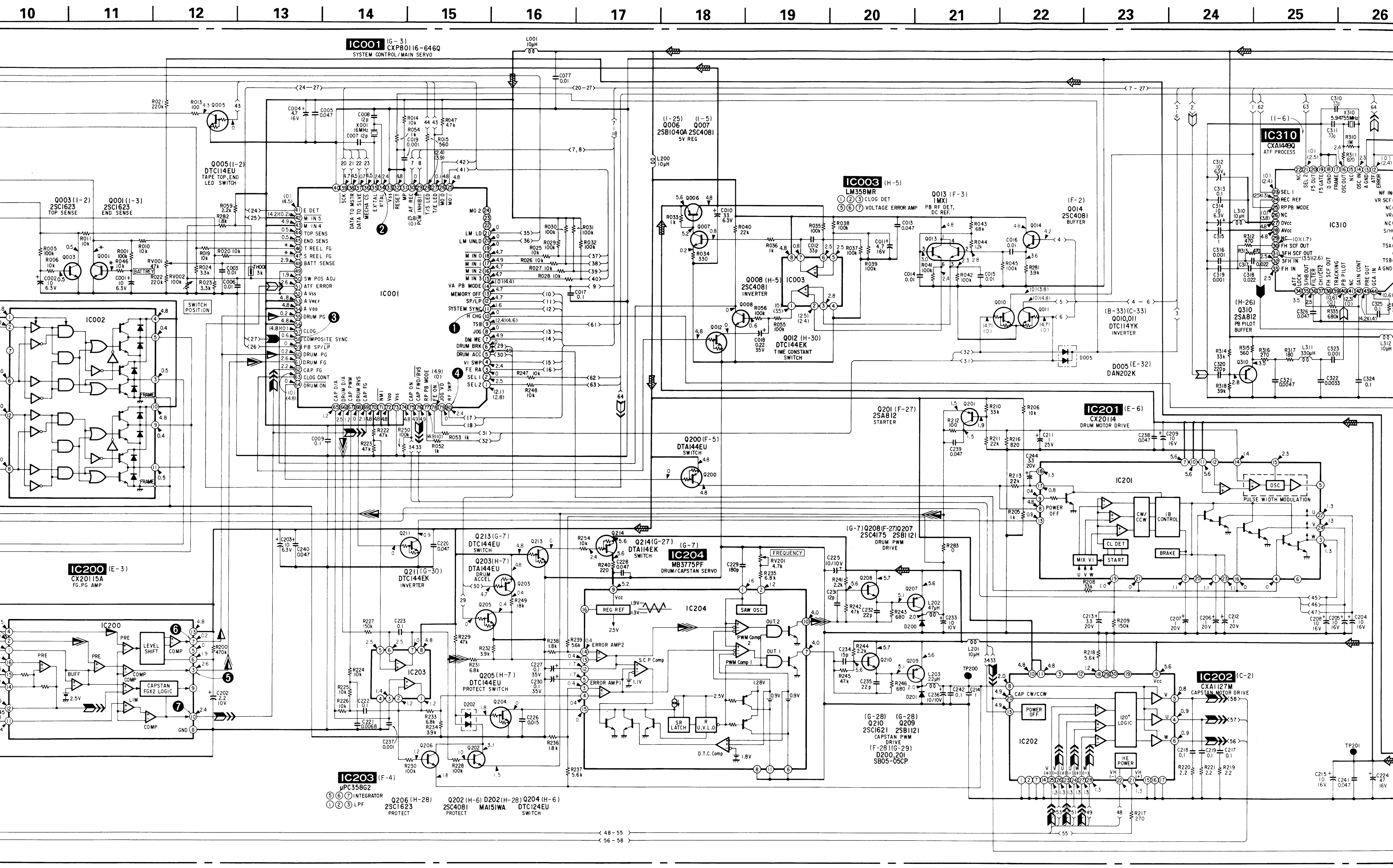
31
32
33
21

• SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		➤	
Drum phase servo		➢	
Drum servo (speed and phase)		➢➢	
Capstan speed servo			
Capstan phase servo			⊳⊳
Capstan servo (speed and phase)		➡	
Ref. signal	➧		⊳


(See Page 123)
MECHANISM BLOCK (U MECHA)
TO MR-30 BOARD CN801
FP-161 BOARD
CN001
M903 LOADING MOTOR
M902 CAPSTAN
CAPSTAN MOTOR
HALL DEVICE
DRUM MOTOR
M901 DRUM
FG, PG
FE
FP-89 BOARD(FLEXIBLE)
FP-90 BOARD(FLEXIBLE)
Q301 EE-TP109 TAPE END SENSOR
S901 CASSETTE DOWN
ENCODER (MODE SW)
D301 TLP907 S-REEL
D302 GL-452S TAPE T/E LED
Q302 EE-TP109 TAPE TOP SENSOR
D303 TLP907 T-REEL
S302 MP HG
ME/MP REC PROOF
CC-27P BOARD
D001 IMN10
D002 IMN10
D003 MA151WK
CN003
W001
CHASSIS GND
FP-240 (FLEXIBLE)
SS-95P BOARD
W006
CN202
CN003
CN201
W004
TP005
TP006
IC001 (G-3) CXP80116-646Q SYSTEM CONTROL/MAIN SERVO
IC002 (G-9) LB1631 LOADING MOTOR DRIVE
IC200 (E-3) CX20115A FG.PG AMP
IC203 (F-4) μPC358G2 ⑤⑥⑦ INTEGRATOR ①②③ LPF
Q001 (I-3) 2SC1623 END SENSE
Q003 (I-2) 2SC1623 TOP SENSE
Q005 (I-2) DTC114EU TAPE TOP,END LED SWITCH
Q211 (G-30) DTC144EK INVERTER
Q212 (E-3) IMT1 US COMP
Q213 (G-7) DTC144EU SWITCH
Q203 (H-7) DTA144EU DRUM ACCEL
Q205 (H-7) DTC144EU PROTECT SWITCH
Q206 (H-28) 2SC1623 PROTECT
Q202 (H-6) 2SC4081 PROTECT
D202 (H-28) MA151WA
Q204 (H-6) DTC124EU SWITCH
SWITCH POSITION
BATTERY
X001 16MHz
L001 10μH
LEVEL SHIFT
CAPSTAN FGX2 LOGIC

- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.


10
11
12
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16
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19
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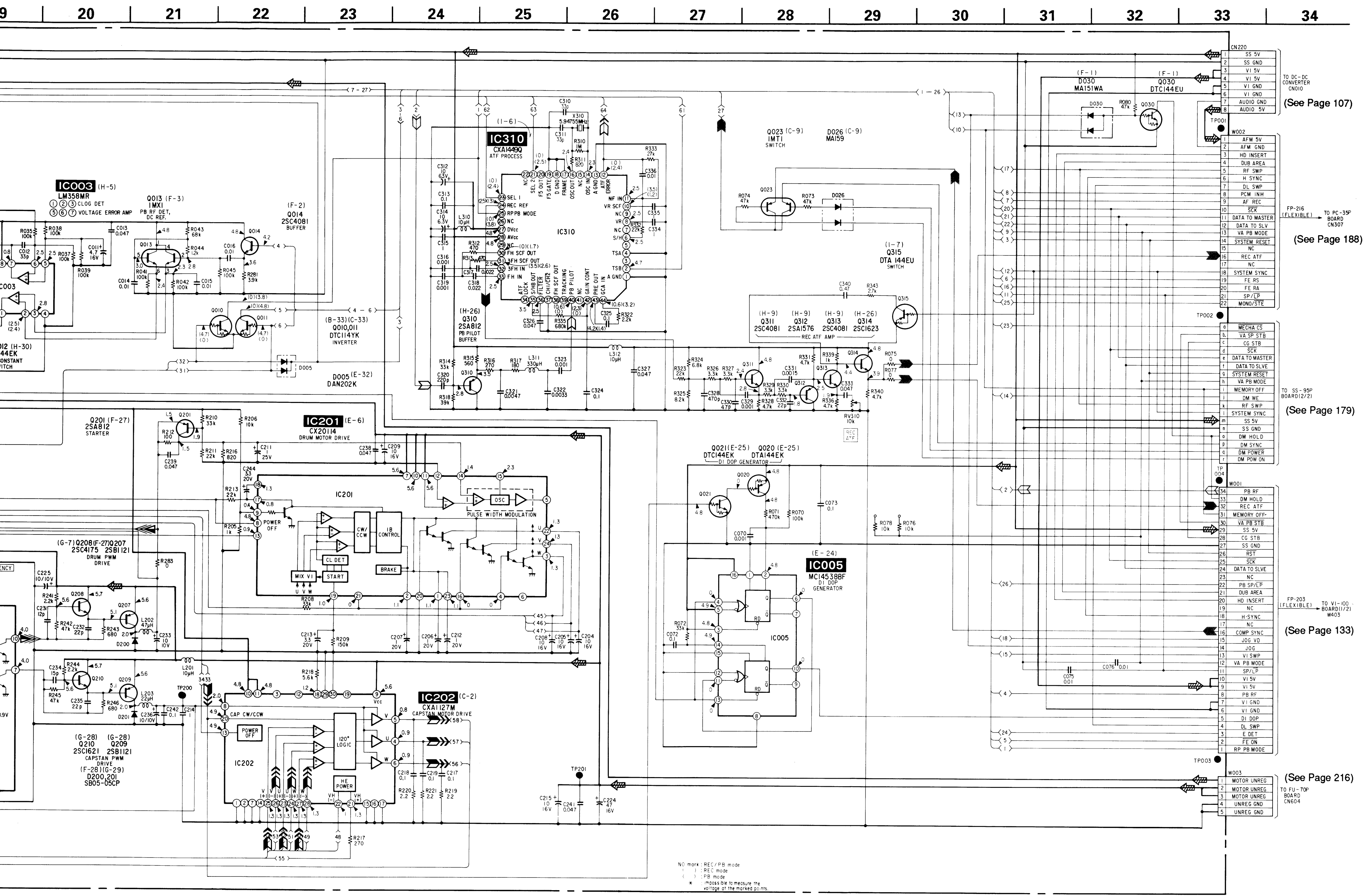
21
22
23
24
25
26
IC001 (G-3) CXP80116-646Q
SYSTEM CONTROL/MAIN SERVO
IC003 (H-5) LM358MR
①②③ CLOG DET
⑤⑥⑦ VOLTAGE ERROR AMP
IC310 CXA1449Q ATF PROCESS
IC002
Q003 (I-2) 2SC1623 TOP SENSE
Q001 (I-3) 2SC1623 END SENSE
Q005 (I-2) DTC114EU TAPE TOP, END LED SWITCH
Q006 (I-25) 2SB1040A 5V REG
Q007 (I-5) 2SC4081
Q008 (H-5) 2SC4081 INVERTER
Q012 (H-30) DTC144EK TIME CONSTANT SWITCH
Q013 (F-3) IMX1 PB RF DET, DC REF.
Q014 (F-2) 2SC4081 BUFFER
Q010, 011 (B-33)(C-33) DTC114YK INVERTER
D005 (E-32) DAN202K
Q310 (H-26) 2SA812 PB PILOT BUFFER
Q201 (F-27) 2SA812 STARTER
Q200 (F-5) DTA144EU SWITCH
IC201 (E-6) CX20114 DRUM MOTOR DRIVE
PULSE WIDTH MODULATION
IC200 (E-3) CX20115A FG.PG AMP
Q211 (G-30) DTC144EK INVERTER
Q213 (G-7) DTC144EU SWITCH
Q203 (H-7) DTA144EU DRUM ACCEL
Q214 (G-27) DTA114EK SWITCH
IC204 (G-7) MB3775PF DRUM/CAPSTAN SERVO
Q205 (H-7) DTC144EU PROTECT SWITCH
Q208 (G-7) (F-27) Q207 2SC4175 2SB1121 DRUM PWM DRIVE
Q210 Q209 (G-28) (G-28) 2SC1621 2SB1121 CAPSTAN PWM DRIVE
D200, 201 (F-28)(G-29) SB05-05CP
IC202 (C-2) CXA1127M CAPSTAN MOTOR DRIVE
IC203 (F-4) μPC358G2
⑤⑥⑦ INTEGRATOR
①②③ LPF
Q206 (H-28) 2SC1623 PROTECT
Q202 (H-6) 2SC4081 PROTECT
D202 (H-28) MA151WA
Q204 (H-6) DTC124EU SWITCH
SWITCH POSITION
BATTERY
FREQUENCY
48 - 55
56 - 58

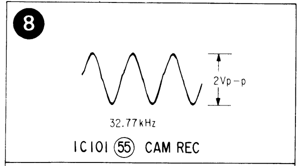

20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
IC003 (H-5)
LM358MR
①②③ CLOG DET
⑤⑥⑦ VOLTAGE ERROR AMP
Q013 (F-3)
IMXI
PB RF DET, DC REF.
(F-2)
Q014
2SC4081
BUFFER
Q010,011
DTC114YK
INVERTER
(B-33)(C-33)
D005 (E-32)
DAN202K
IC310
CXA1449Q
ATF PROCESS
(I-6)
X310
5.94755MHz
SEL 1
REC REF
RPPB MODE
NC
DVcc
AVcc
NC
FH SCF OUT
3FH SCF OUT
3FH IN
FH IN
NF IN
VR SCF
NC
VR
NC
S/H
TSA
TSB
A GND
(H-26)
Q310
2SA812
PB PILOT BUFFER
Q023 (C-9)
IMT1
SWITCH
D026 (C-9)
MA159
(I-7)
Q315
DTA 144EU
SWITCH
(H-9) Q311 2SC4081
(H-9) Q312 2SA1576
(H-9) Q313 2SC4081
(H-26) Q314 2SC1623
REC ATF AMP
RV310 10k
REC ATF
(F-1)
D030
MA151WA
(F-1)
Q030
DTC144EU
Q201 (F-27)
2SA812
STARTER
IC201 (E-6)
CX20114
DRUM MOTOR DRIVE
IC201
CW/CCW
IB CONTROL
CL DET
START
MIX VI
BRAKE
OSC
PULSE WIDTH MODULATION
POWER OFF
(G-7)Q208(F-27)Q207
2SC4175 2SB1121
DRUM PWM DRIVE
(G-28) Q210 (G-28) Q209
2SC1621 2SB1121
CAPSTAN PWM DRIVE
(F-28)(G-29)
D200,201
SB05-05CP
IC202 (C-2)
CXA1127M
CAPSTAN MOTOR DRIVE
IC202
CAP CW/CCW
POWER OFF
120° LOGIC
HE POWER
TP200
TP201
Q021(E-25) Q020 (E-25)
DTC144EK DTA144EK
DI DOP GENERATOR
IC005 (E-24)
MC14538BF
DI DOP GENERATOR
IC005
CN220
1 SS 5V
2 SS GND
3 VI 5V
4 VI 5V
5 VI GND
6 VI GND
7 AUDIO GND
8 AUDIO 5V
TO DC-DC CONVERTER CN010
(See Page 107)
TP001
W002
1 AFM 5V
2 AFM GND
3 HD INSERT
4 DUB AREA
5 RF SWP
6 H SYNC
7 DL SWP
8 PCM INH
9 AF REC
10 SCK
11 DATA TO MASTER
12 DATA TO SLV
13 VA PB MODE
14 SYSTEM RESET
15 NC
16 REC ATF
17 NC
18 SYSTEM SYNC
19 FE RS
20 FE RA
21 SP/LP
22 MONO/STE
FP-216 (FLEXIBLE)
TO PC-35P BOARD CN307
(See Page 188)
TP002
a MECHA CS
b. VA SP STB
c CG STB
d SCK
e DATA TO MASTER
f DATA TO SLVE
g SYSTEM RESET
h VA PB MODE
i MEMORY OFF
j DM WE
k RF SWP
l SYSTEM SYNC
m SS 5V
n SS GND
o DM HOLD
p DM SYNC
q DM POWER
r DM POW ON
TO SS-95P BOARD(2/2)
(See Page 179)
TP 004
W001
34 PB RF
33 DM HOLD
32 REC ATF
31 MEMORY OFF-
30 VA PB STB
29 SS 5V
28 CG STB
27 SS GND
26 RST
25 SCK
24 DATA TO SLVE
23 NC
22 PB SP/LP
21 DUB AREA
20 HD INSERT
19 NC
18 H-SYNC
17 NC
16 COMP SYNC
15 JOG VD
14 JOG
13 VI SWP
12 VA PB MODE
11 SP/LP
10 VI 5V
9 VI 5V
8 PB RF
7 VI GND
6 VI GND
5 DI DOP
4 DL SWP
3 E DET
2 FE ON
1 RP PB MODE
FP-203 (FLEXIBLE)
TO VI-100 BOARD(1/2) W403
(See Page 133)
TP003
W003
1 MOTOR UNREG
2 MOTOR UNREG
3 MOTOR UNREG
4 UNREG GND
5 UNREG GND
TO FU-70P BOARD CN604
(See Page 216)

NO mark : REC/PB mode
( ) : REC mode
〈 〉 : PB mode
* : impossible to measure the voltage at the marked points.

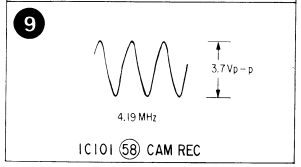
SS-95P (SERVO/SYSTEM CONTROL,TITLER), LI-12P (LITHIUM BATTERY, MONITOR SELECT SWITCH) PRINTED WIRING BOARDS

— Ref. No. SS-95P BOARD: 5000 series, LI-12P BOARD: 6000 series —

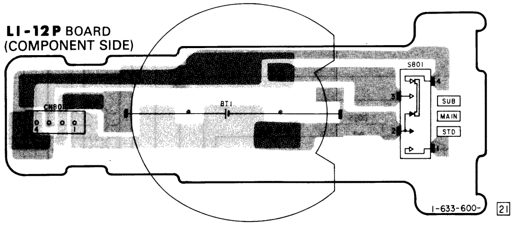
SS-95P BOARD (2/2)

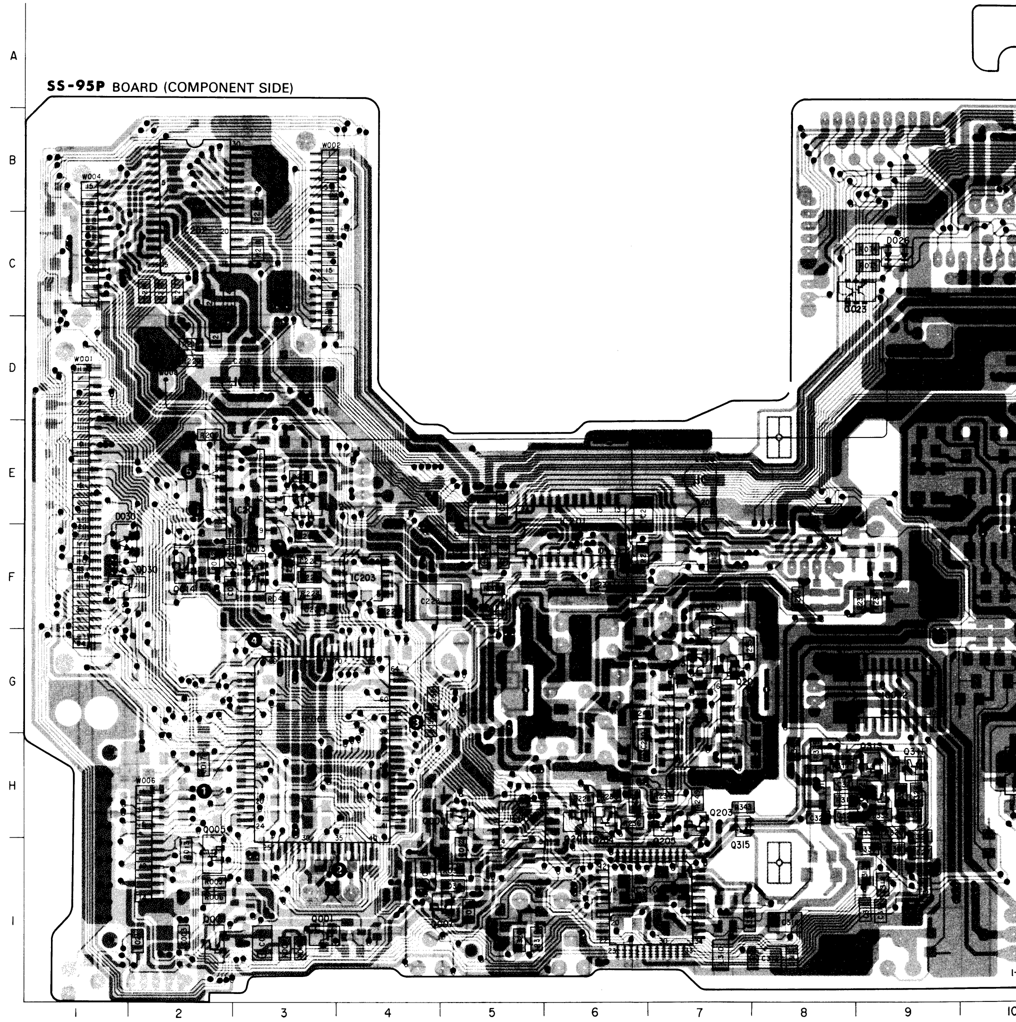


IC101 (55) CAM REC



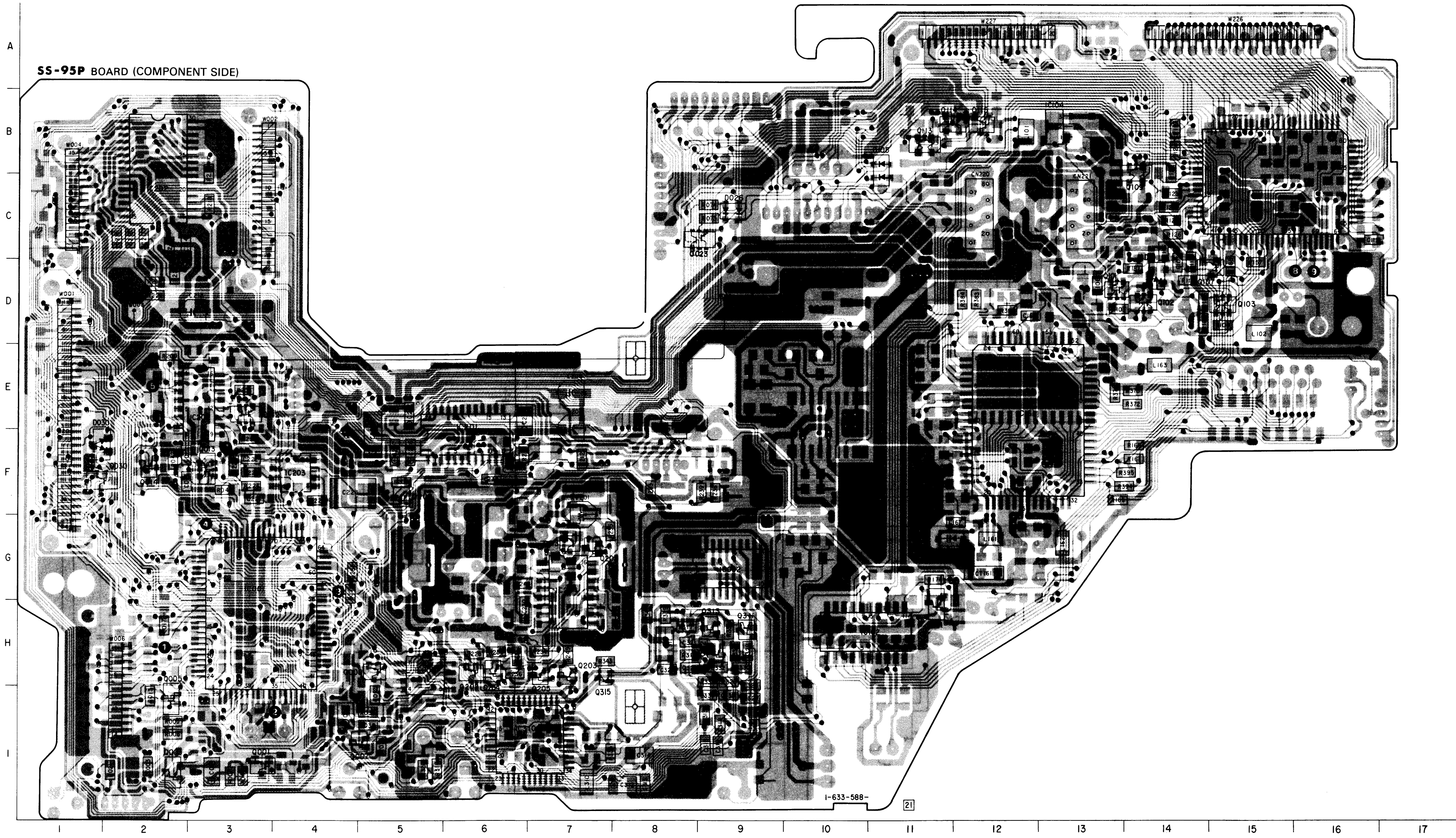
IC101 (58) CAM REC


LI-12P BOARD
(COMPONENT SIDE)
CN801
BT1
S801
SUB
MAIN
STD
1-633-600-
21


SS-95P BOARD (COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
W002
W004
W001
W006
D030
Q030
IC203
Q203
Q315
Q025
D026
Q001

Y, MONITOR SELECT SWITCH) PRINTED WIRING BOARDS

SS-95P BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
W227
W226
W004
W001
W002
W006
D025
Q025
CN220
CN221
Q102
Q103
L102
L163
R372
R393
Q203
Q315
1-633-588-
21
1
2
3
4
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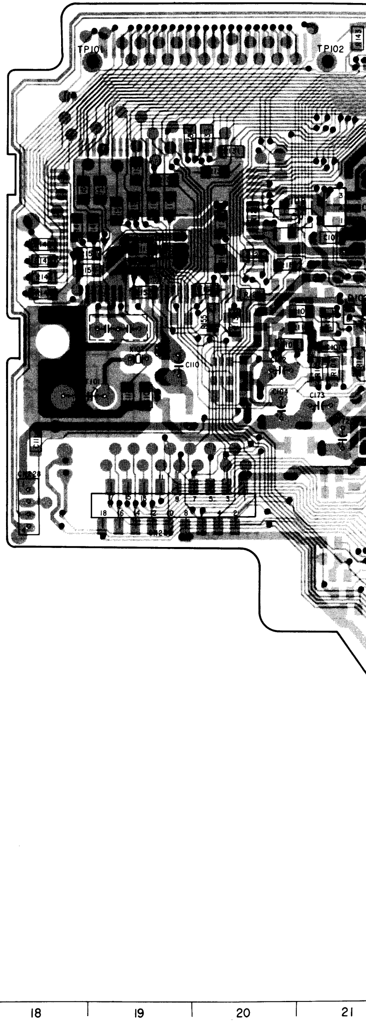
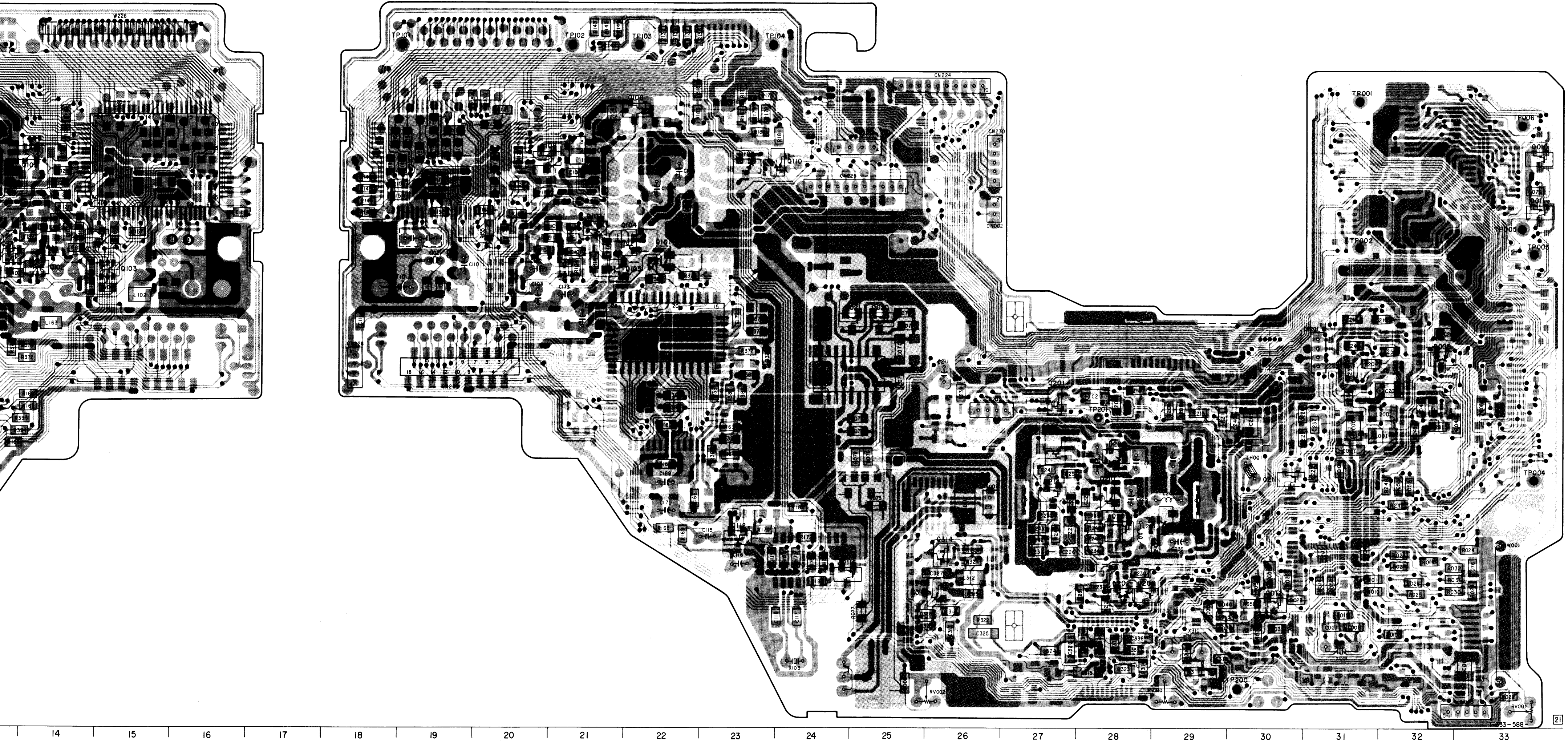
20
21

SS-95P BOARD (CONDUCTOR SIDE)


TP101
TP102
C110
C173

SS-95P BOARD (CONDUCTOR SIDE)



W226
Q103
L102
L163
TP101
TP102
TP103
TP104
Q109
Q110
Q104
Q161
C110
C173
C169
C170
C115
C116
CN224
CN225
CN230
CN002
TP001
TP006
TP005
TP003
TP002
TP004
Q201
TP201
TH001
Q314
R322
C325
X103
X310
X001
TP200
RV002
RV001
W001
33-588
14
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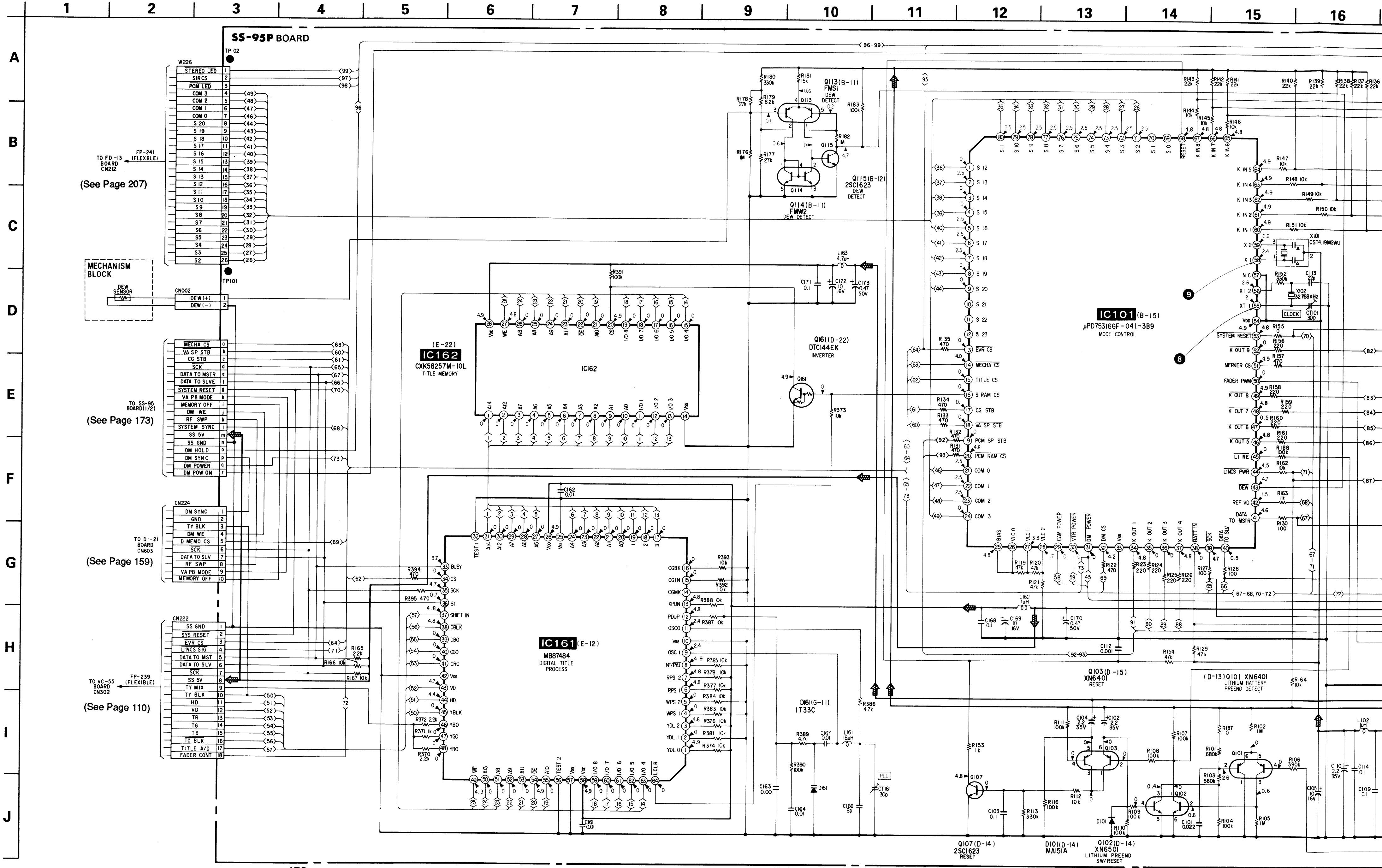
32
33


SS-95P BOARD
W226
STEREO LED
SIRCS
PCM LED
COM 3
COM 2
COM 1
COM 0
S 20
S 19
S 18
S 17
S 16
S 15
S 14
S 13
S 12
S 11
S 10
S9
S8
S7
S6
S5
S4
S3
S2
TP102
TP101
FP-241 (FLEXBLE)
TO FD-13 BOARD CN212
(See Page 207)
MECHANISM BLOCK
DEW SENSOR
CN002
DEW(+)
DEW(−)
MECHA CS
VA SP STB
CG STB
SCK
DATA TO MSTR
DATA TO SLVE
SYSTEM RESET
VA PB MODE
MEMORY OFF
DM WE
RF SWP
SYSTEM SYNC
SS 5V
SS GND
OM HOLD
DM SYNC
DM POWER
DM POW ON
TO SS-95 BOARD(1/2)
(See Page 173)
CN224
DM SYNC
GND
TY BLK
DM WE
D MEMO CS
SCK
DATA TO SLV
RF SWP
VA PB MODE
MEMORY OFF
TO DI-21 BOARD CN603
(See Page 159)
CN222
SS GND
SYS RESET
EVR CS
LINCS SIG
DATA TO MST
DATA TO SLV
SCK
SS 5V
TY MIX
TY BLK
HD
VD
TR
TG
TB
TC BLK
TITLE A/D
FADER CONT
FP-239 (FLEXIBLE)
TO VC-55 BOARD CN302
(See Page 110)
IC162 (E-22)
CXK58257M-10L
TITLE MEMORY
IC162
IC161 (E-12)
MB87484
DIGITAL TITLE PROCESS
Q113(B-11) FMS1 DEW DETECT
Q114(B-11) FMW2 DEW DETECT
Q115(B-12) 2SC1623 DEW DETECT
Q161(D-22) DTC144EK INVERTER
D161(G-11) 1T33C
PLL
IC101 (B-15)
μPD75316GF-041-3B9
MODE CONTROL
X101 CST4.19MGWU
X102 32.768KHz
CLOCK
Q103(D-15) XN6401 RESET
(D-13)Q101 XN6401 LITHIUM BATTERY PREEND DETECT
Q107(D-14) 2SC1623 RESET
D101(D-14) MA151A
Q102(D-14) XN6501 LITHIUM PREEND SW/RESET
9
8
1
2
3
4
5
6
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15
16
A
B
C
D
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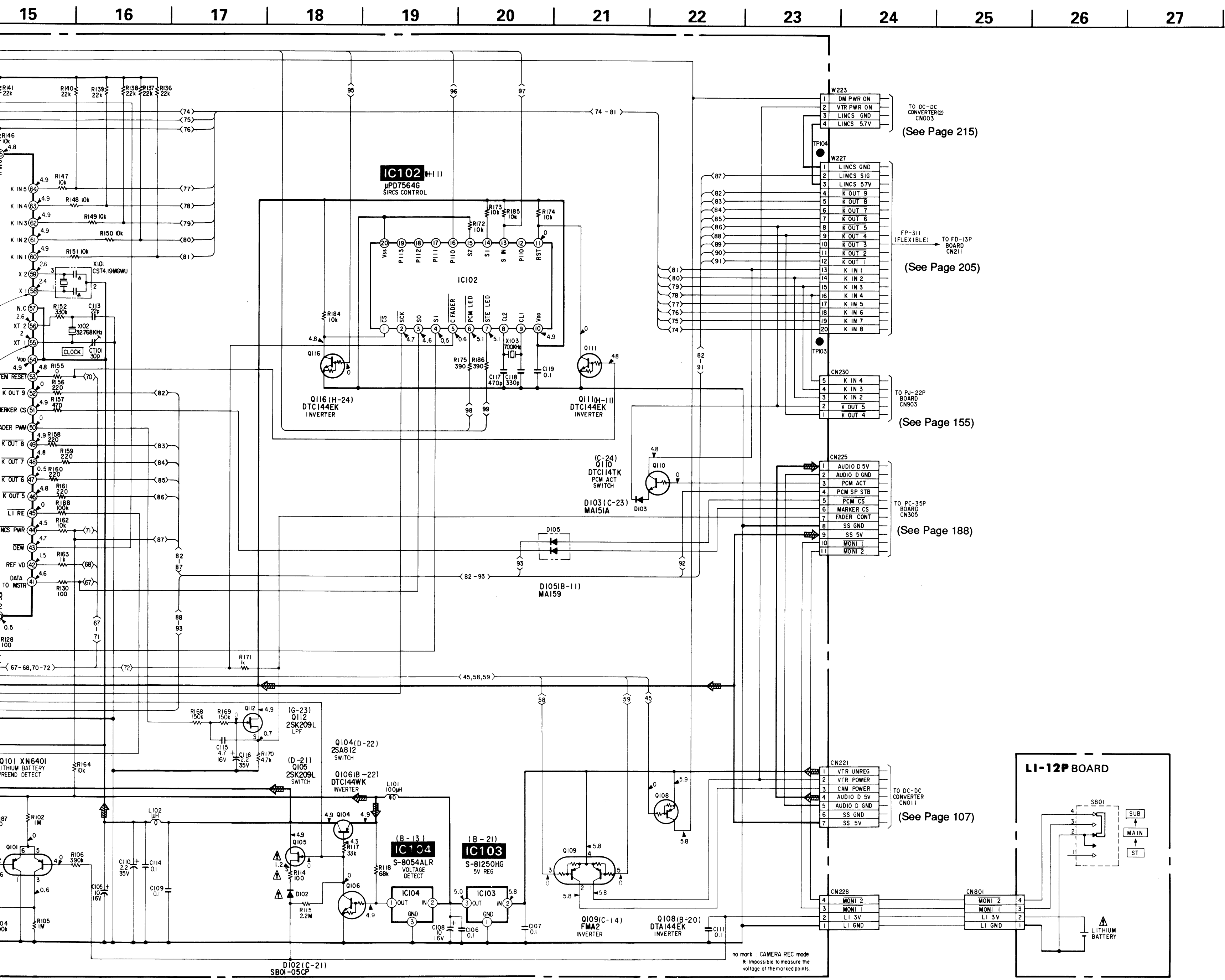
G
H
I
J


15
16
17
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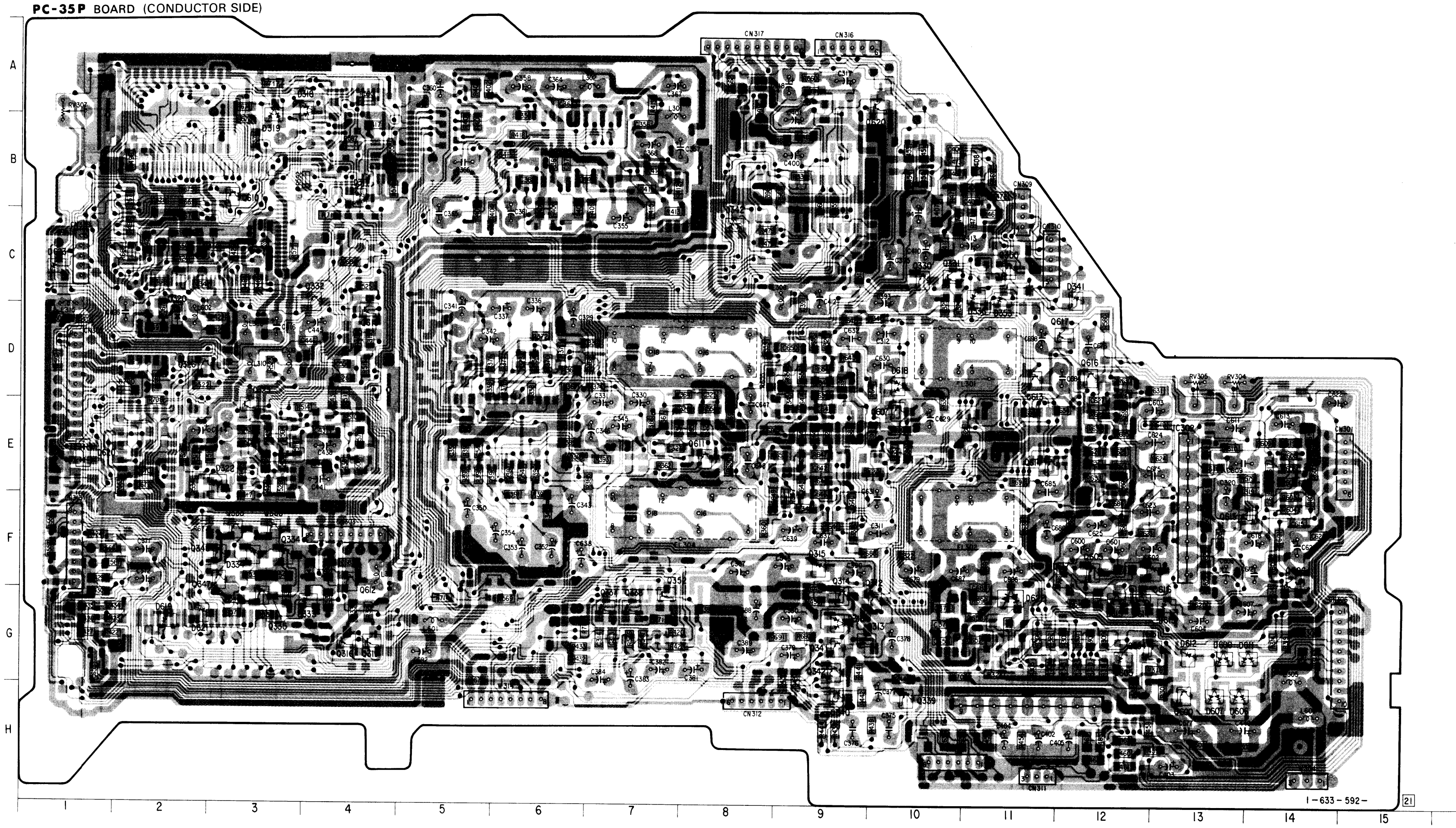
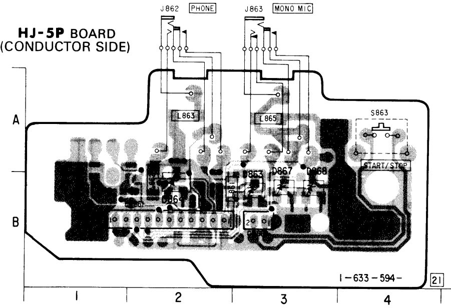
20
21
22
23
24
25
26
27
IC102
μPD7564G
SIRCS CONTROL
Q116 (H-24)
DTC144EK
INVERTER
Q111 (H-11)
DTC144EK
INVERTER
(C-24)
Q110
DTC114TK
PCM ACT SWITCH
D103 (C-23)
MA151A
D105 (B-11)
MA159
X101
CST4.19MGWU
X102
32.768KHz
X103
700KHz
CLOCK
W223
DM PWR ON
VTR PWR ON
LINCS GND
LINCS 5.7V
TO DC-DC CONVERTER(2) CN003
(See Page 215)
W227
LINCS GND
LINCS SIG
LINCS 5.7V
K OUT 9
K OUT 8
K OUT 7
K OUT 6
K OUT 5
K OUT 4
K OUT 3
K OUT 2
K OUT 1
K IN 1
K IN 2
K IN 3
K IN 4
K IN 5
K IN 6
K IN 7
K IN 8
FP-311 (FLEXIBLE)
TO FD-13P BOARD CN211
(See Page 205)
TP104
TP103
CN230
K IN 4
K IN 3
K IN 2
K OUT 5
K OUT 4
TO PJ-22P BOARD CN903
(See Page 155)
CN225
AUDIO D 5V
AUDIO D GND
PCM ACT
PCM SP STB
PCM CS
MARKER CS
FADER CONT
SS GND
SS 5V
MONI 1
MONI 2
TO PC-35P BOARD CN305
(See Page 188)
CN221
VTR UNREG
VTR POWER
CAM POWER
AUDIO D 5V
AUDIO D GND
SS GND
SS 5V
TO DC-DC CONVERTER CN011
(See Page 107)
CN228
MONI 2
MONI 1
LI 3V
LI GND
CN801
LI-12P BOARD
S801
SUB
MAIN
ST
LITHIUM BATTERY
Q112 (G-23)
2SK209L
LPF
Q104 (D-22)
2SA812
SWITCH
(D-21)
Q105
2SK209L
SWITCH
Q106 (B-22)
DTC144WK
INVERTER
L101
100μH
L102
1μH
(B-13)
IC104
S-8054ALR
VOLTAGE DETECT
(B-21)
IC103
S-81250HG
5V REG
Q109 (C-14)
FMA2
INVERTER
Q108 (B-20)
DTA144EK
INVERTER
Q101 XN6401
LITHIUM BATTERY
PREEND DETECT
D102 (C-21)
SB01-05CP
no mark : CAMERA REC mode
✱ Impossible to measure the voltage at the marked points.

- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.

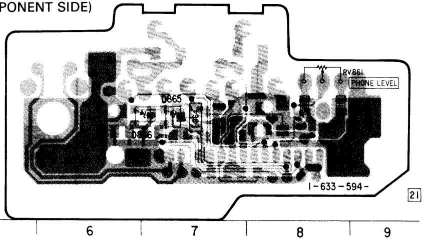
PC-35P BOARD (CONDUCTOR SIDE)


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
CN317
CN316
CN309
CN301
CN312
CN311
RV306
RV304
1-633-592-
21

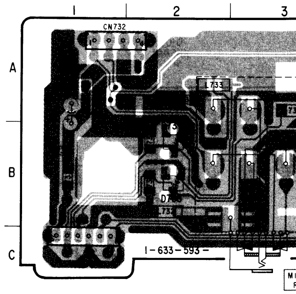
HJ-5P BOARD
(CONDUCTOR SIDE)


J862
PHONE
J863
MONO MIC
L863
L865
S863
START/STOP
D867
D868
A
B
1
2
3
4
1-633-594-
21

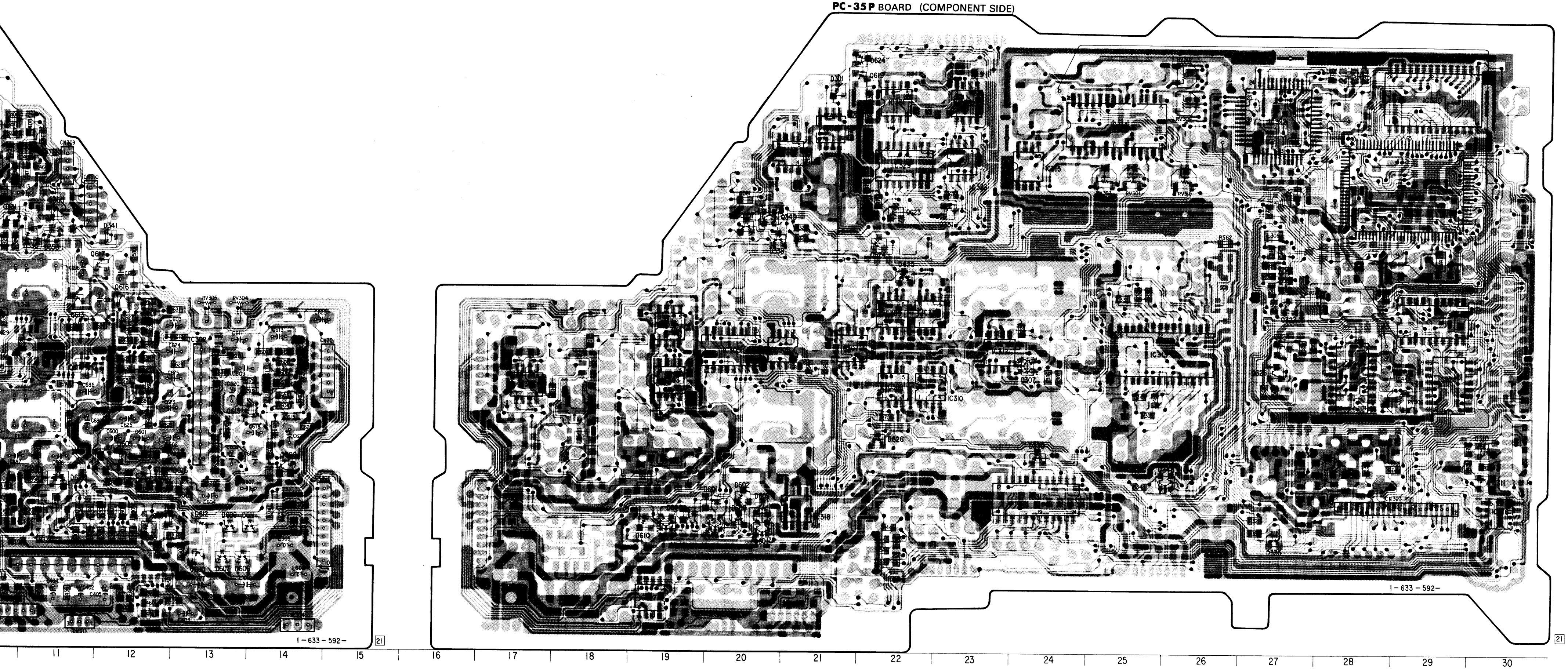
HJ-5P BOARD
(COMPONENT SIDE)


RV861
PHONE LEVEL
D865
D866
5
6
7
8
9
1-633-594-
21

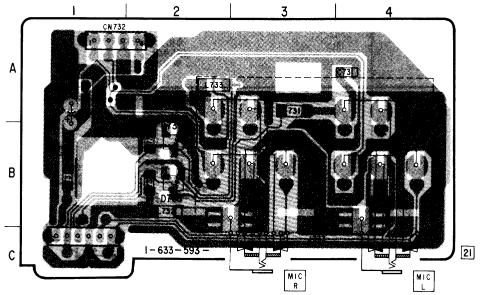
MJ-23P BOARD


1
2
3
A
B
C
CN732
L733
1-633-593-

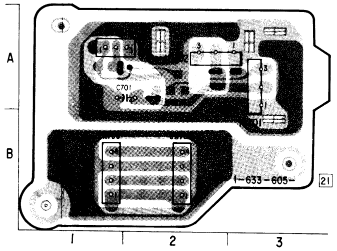
PC-35P BOARD (COMPONENT SIDE)

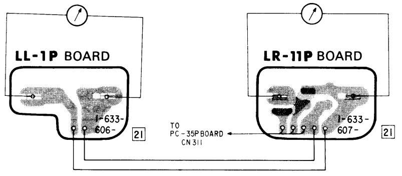

CN309
D341
RV305
RV304
IC300
CN301
D612
D607
D606
CN311
1-633-592-
21
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
Q624
D301
Q623
IC310
Q307
D626
D610
D602
IC318
RV301
R562
CN307
1-633-592-
21

MJ-23P BOARD


1
2
3
4
A
B
C
CN732
733
731
1-633-593-
21
MIC R
MIC L

IR-20P BOARD


A
B
C701
1-633-605-
21
1
2
3


LL-1P BOARD
1-633-606-
21
LR-11P BOARD
1-633-607-
21
TO PC-35P BOARD CN311

PC-35P (PCM AUDIO PROCESS), MJ-23P(L/R MIC JACK), HJ-5P (HEADPHONE/MONO MIC JACK), IR-20P (RELAY, REMOTE SENSOR), LL-1P (L LEVEL METER), LR-11P (R LEVEL METER) SCHEMATIC DIAGRAMS

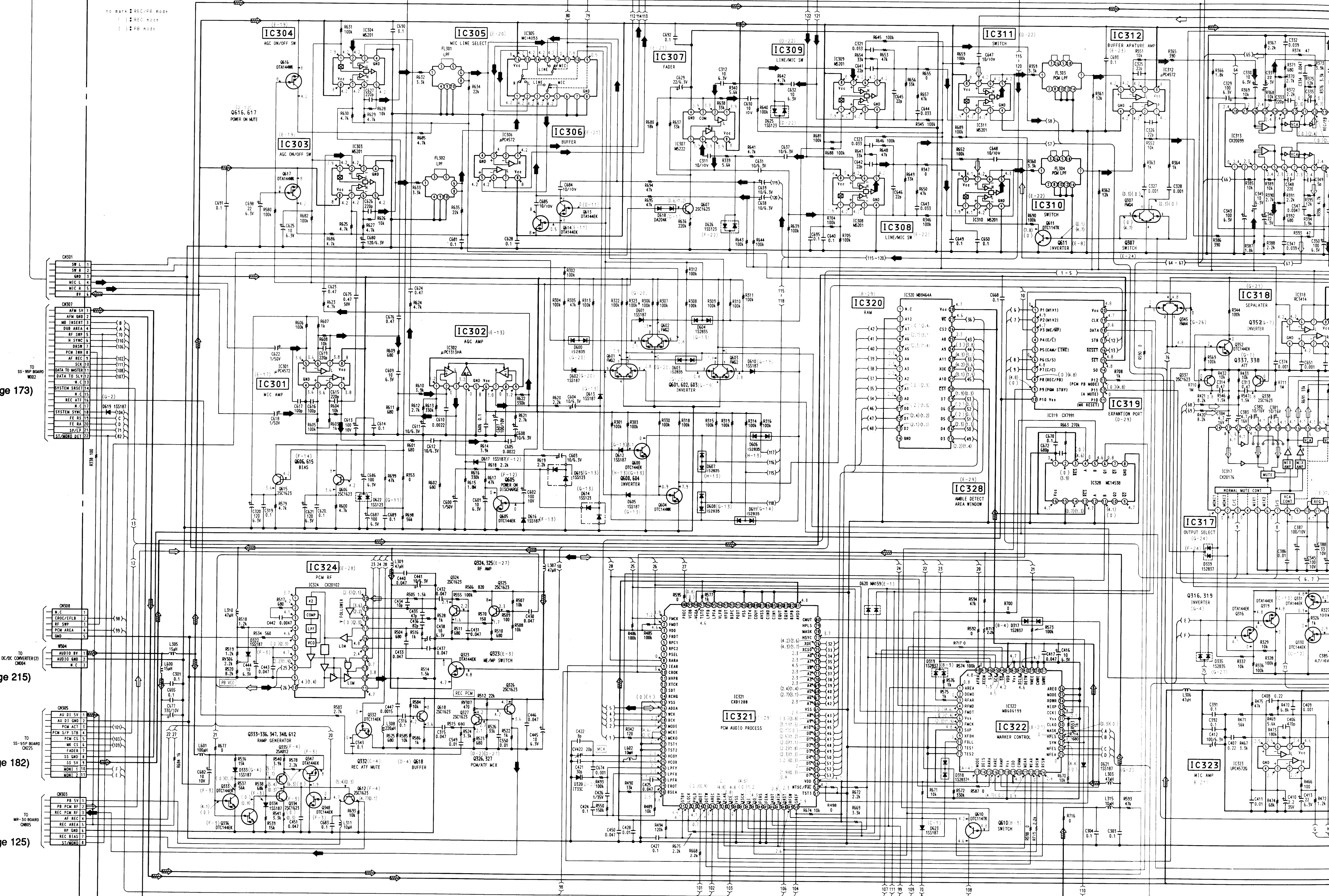
— Ref. No. LL-1P BOARD: 3000 series, PC-35P BOARD: 6000 series, MJ-23P, HJ-5P BOARD: 7000 series, IR-20P BOARD: 8000 series, LR-11P BOARD: 9000 serie

- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.

• SIGNAL PATH (ANALOG)

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				⇨

es —



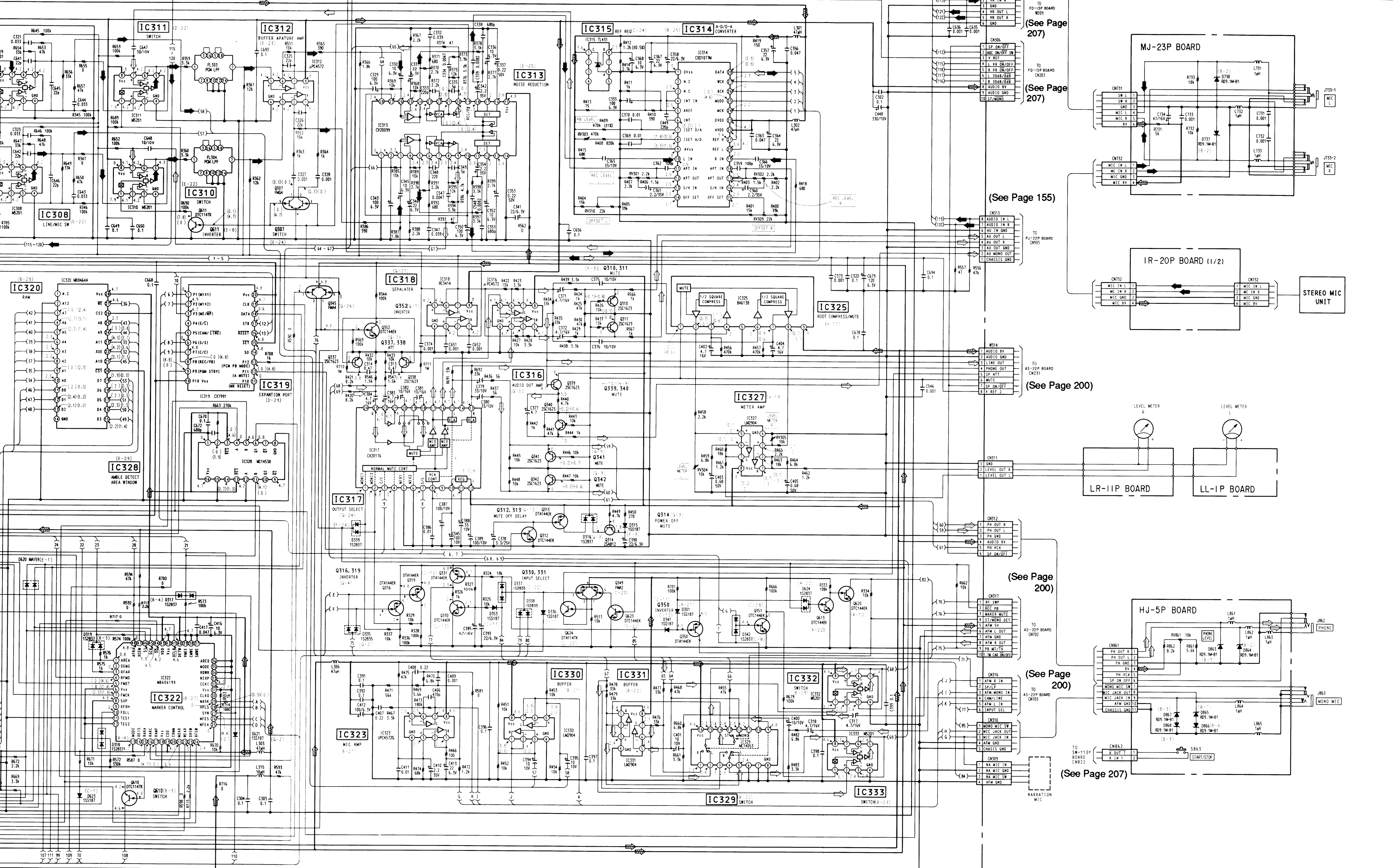
no mark : REC/PB mode
( ) : REC mode
[ ] : PB mode
IC304 AGC ON/OFF SW
IC303 AGC ON/OFF SW
IC305 MIC LINE SELECT
IC306 BUFFER
IC307 FADER
IC309 LINE/MIC SW
IC308 LINE/MIC SW
IC311 SWITCH
IC310 SWITCH
IC312 BUFFER APATURE AMP
IC313 CX20099
IC301 MIC AMP
IC302 AGC AMP
IC320 RAM
IC320 MB8464A
IC319 EXPANTION PORT
IC319 CX7991
IC328 AMBLE DETECT AREA WINDOW
IC328 MC14538
IC318 SEPALATER
IC317 OUTPUT SELECT
IC317 CX20176
IC324 PCM RF
IC324 CX20102
IC321 PCM AUDIO PROCESS
IC321 CXD1208
IC322 MARKER CONTROL
IC322 MB66499
IC323 MIC AMP
IC323 UPC4572G
Q616, 617 POWER ON MUTE
Q606, 615 BIAS
Q605 POWER ON DISCHARGE
Q601, 602, 603 INVERTER
Q600, 604 INVERTER
Q307 SWITCH
Q611 INVERTER
Q345 FMA4
Q352 INVERTER
Q337, 338 ATT
Q316, 319 INVERTER
Q324, 325 RF AMP
Q323 ME/MP SWITCH
Q326, 327 PCM/ATF MIX
Q333-336, 347, 348, 612 RAMP GENERATOR
Q332 REC ATF MUTE
Q618 BUFFER
Q610 SWITCH
CN301
SW L
SW R
GND
MIC L
MIC R
8V
CN307
AFM 5V
AFM GND
MD INSERT
DUB AREA
RF SWP
H SYNC
DA5M
PCM INH
AF REC
SCK
DATA TO MASTER
DATA TO SLV
SYSTEM SRSET
N.C
REC ATF
SYSTEM SYNC
FE RS
FE RA
SP/LP
ST/MONO DET
TO SS-95P BOARD W002
CN308
N.C
CROC/EFLB
RF SWP
PCM AREA
GND
W304
AUDIO 8V
AUDIO GND
N.C
TO DC/DC CONVERTER(2) CN004
CN305
AU DI 5V
AU DI GND
PCM ACT
PCM S/P STB
PCM CS
MK CS
FADER
SS GND
SS 5V
MONI 1
MONI 2
TO SS-95P BOARD CN225
CN303
PB 5V
PB PCM RF
REC PCM RF
AF REC
REC AREA
RP GND
REC BIAS
ST/MONO
TO MR-30 BOARD CN805

(See Page 173)

(See Page 215)

(See Page 182)

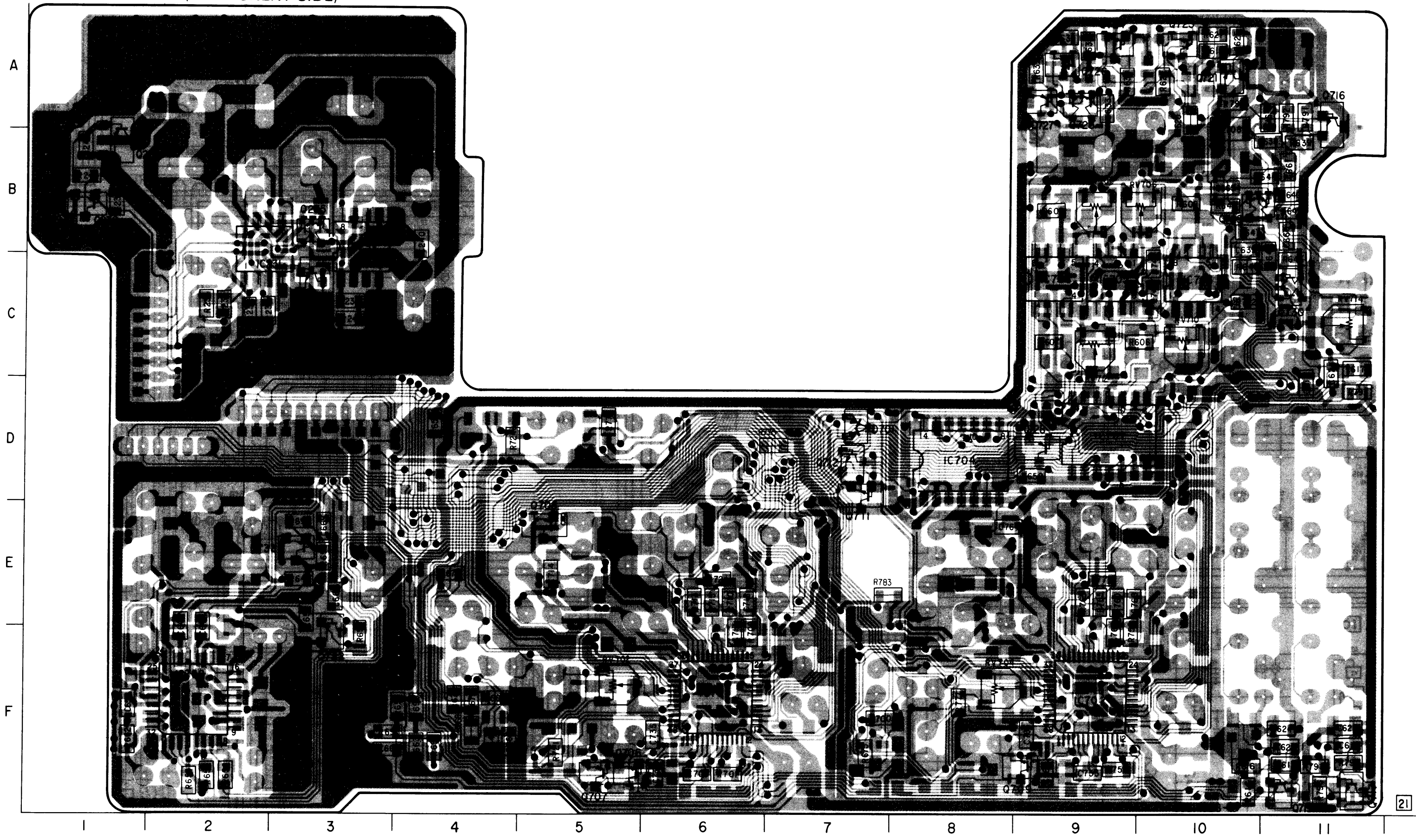
(See Page 125)


IC311 SWITCH
IC312 BUFFER APATURE AMP
IC315 REF REG
IC314 A-D/D-A CONVERTER
IC313 NOISE REDUCTION
IC310 SWITCH
IC308 LINE/MIC SW
Q611 INVERTER
Q307 SWITCH
IC320 RAM
IC319 EXPANTION PORT
IC328 AMBLE DETECT AREA WINDOW
IC318 SEPALATER
Q352 INVERTER
Q337, 338 ATT
IC316 AUDIO OUT AMP
Q310, 311 MUTE
Q339, 340 MUTE
Q341 MUTE
Q342 MUTE
IC317 OUTPUT SELECT
Q312, 313 MUTE OFF DELAY
Q314 POWER OFF MUTE
IC325 ROOT COMPRESS/MUTE
IC327 METER AMP
Q316, 319 INVERTER
Q330, 331 INPUT SELECT
Q350 INVERTER
IC322 MARKER CONTROL
Q610 SWITCH
IC323 MIC AMP
IC330 BUFFER
IC331 BUFFER
IC332 SWITCH
IC329 SWITCH
IC333 SWITCH
MJ-23P BOARD
IR-20P BOARD (1/2)
STEREO MIC UNIT
LEVEL METER R
LEVEL METER L
LR-11P BOARD
LL-1P BOARD
HJ-5P BOARD
PHONE
MONO MIC
START/STOP
NARRATION MIC
TO FD-13P BOARD W209
TO FD-13P BOARD CN203
TO PJ-22P BOARD CN905
TO AS-22P BOARD CN231
TO AS-22P BOARD CN702
TO AS-22P BOARD CN703
TO SW-113P BOARD CN822
(See Page 207)
(See Page 207)
(See Page 155)
(See Page 200)
(See Page 200)
(See Page 200)
(See Page 207)

AS-22P (AFM AUDIO PROCESS) PRINTED WIRING BOARDS

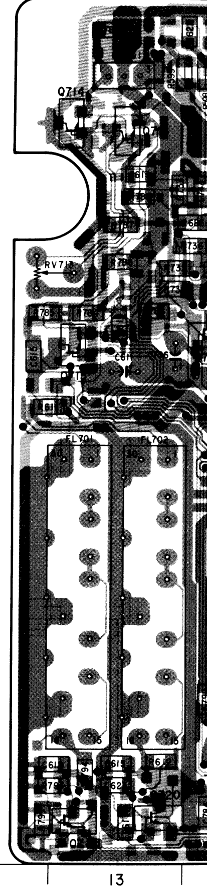
— Ref. No. AS-22P BOARD: 9000 series, —

AS-22P BOARD (COMPONENT SIDE)



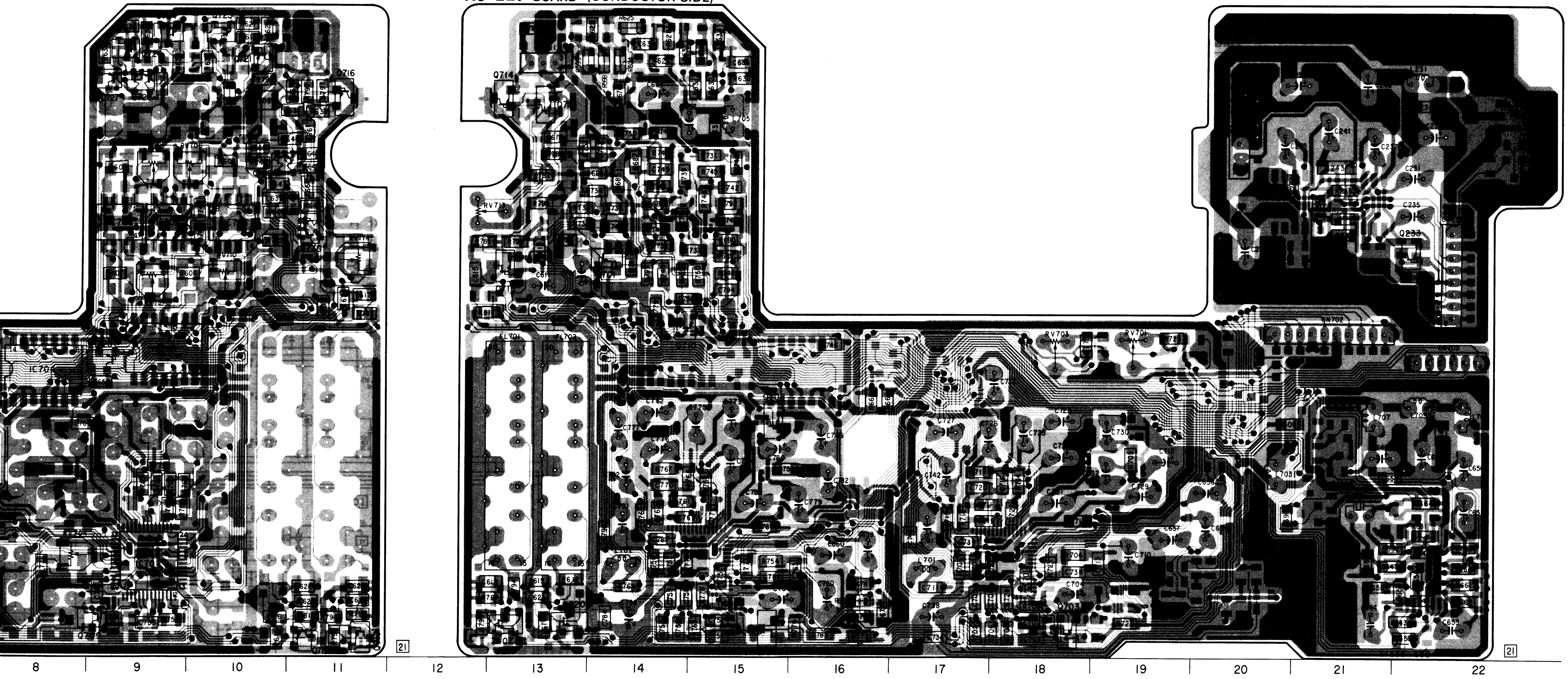
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
11
12
13
Q716
RV702
IC704
R783
Q707
21

AS-22P BOARD (CO



Q714
RV717
FL701
FL702

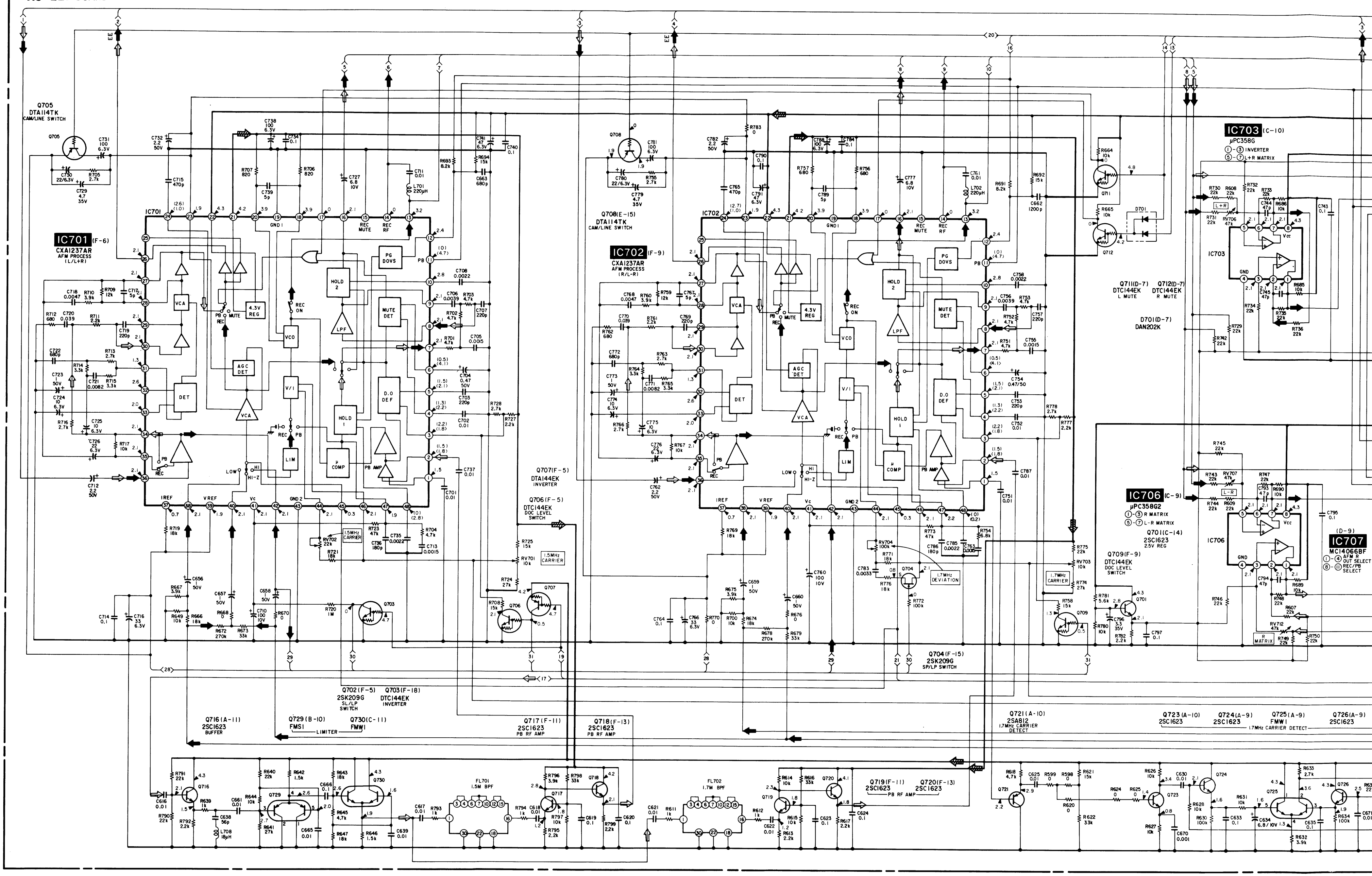
AS-22P BOARD (CONDUCTOR SIDE)


Q714
Q716
RV713
RV710
IC704
L705
EL701
EL702
RV703
RV701
C782
C777
C776
C727
C742
C730
C729
C710
C657
C704
Q703
L701
L703
L707
C656
C653
C241
C237
C231
C235
Q233
SN702
21
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

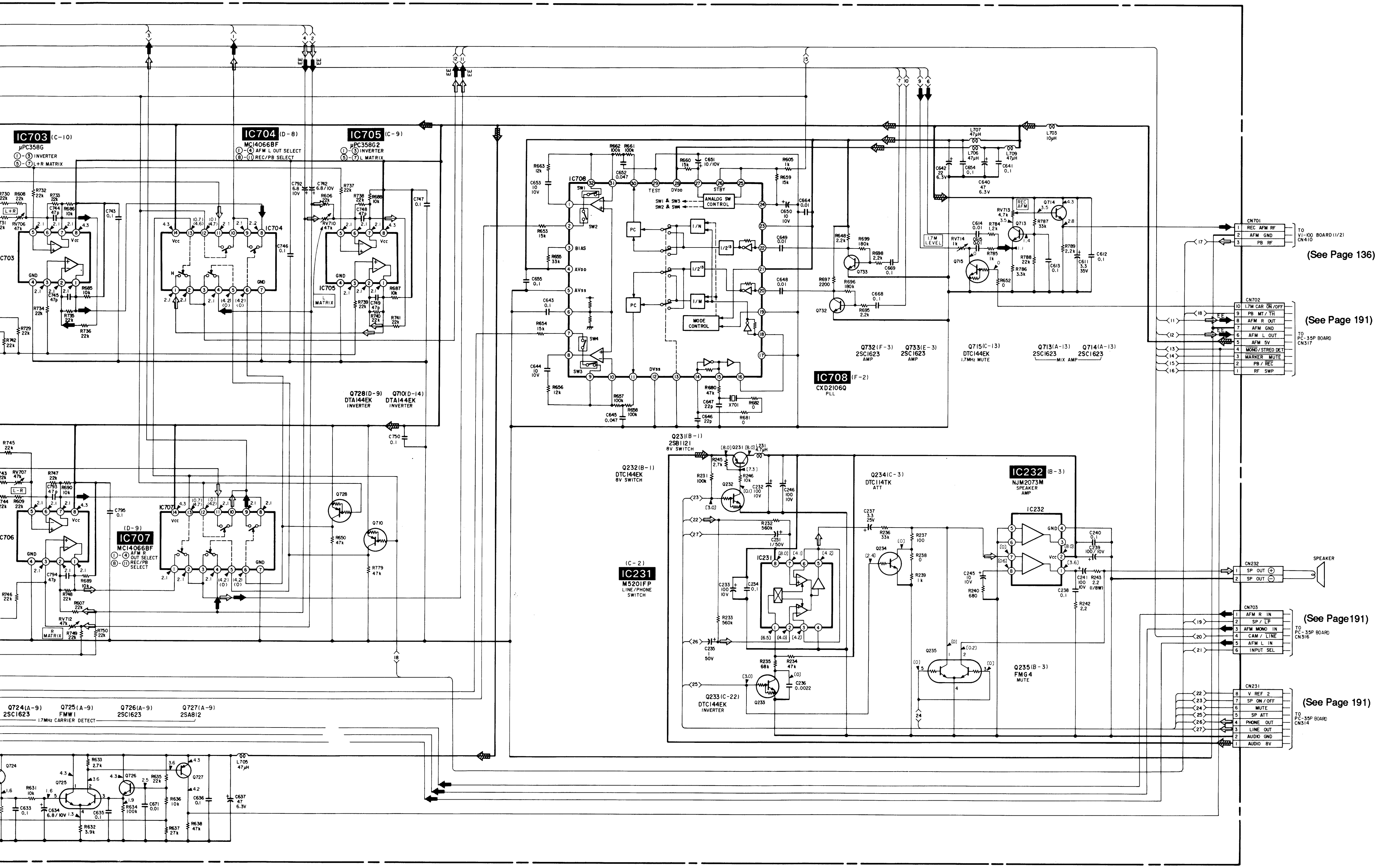
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC				➡
PB				⇨

AS-22P BOARD



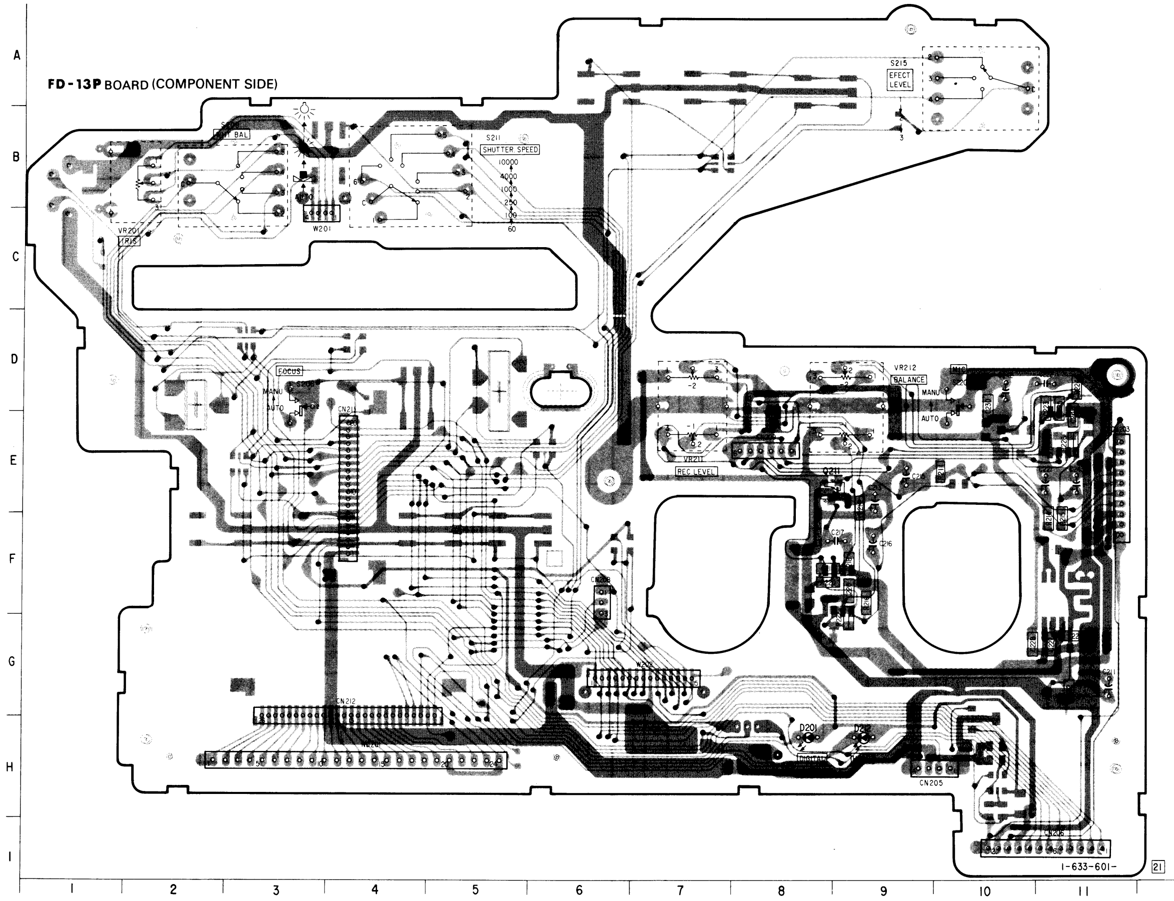
Q705
DTA114TK
CAM/LINE SWITCH
IC701 (F-6)
CXA1237AR
AFM PROCESS
(L/L+R)
IC702 (F-9)
CXA1237AR
AFM PROCESS
(R/L-R)
Q708(E-15)
DTA114TK
CAM/LINE SWITCH
IC703 (C-10)
μPC358G
①-③ INVERTER
⑤-⑦ L+R MATRIX
Q711(D-7) DTC144EK L MUTE
Q712(D-7) DTC144EK R MUTE
D701(D-7)
DAN202K
IC706 (C-9)
μPC358G2
①-③ R MATRIX
⑤-⑦ L-R MATRIX
Q701(C-14)
2SC1623
2.5V REG
Q709(F-9)
DTC144EK
DOC LEVEL SWITCH
(D-9)
IC707
MC14066BF
①-④ AFM R OUT SELECT
⑧-⑪ REC/PB SELECT
Q707(F-5)
DTA144EK
INVERTER
Q706(F-5)
DTC144EK
DOC LEVEL SWITCH
Q702(F-5)
2SK209G
SL/LP SWITCH
Q703(F-18)
DTC144EK
INVERTER
Q704(F-15)
2SK209G
SP/LP SWITCH
1.5MHz CARRIER
1.7MHz CARRIER
1.7MHz DEVIATION
Q716(A-11)
2SC1623
BUFFER
Q729(B-10)
FMS1
Q730(C-11)
FMW1
LIMITER
Q717(F-11)
2SC1623
PB RF AMP
Q718(F-13)
2SC1623
PB RF AMP
Q719(F-11)
2SC1623
Q720(F-13)
2SC1623
PB RF AMP
Q721(A-10)
2SA812
1.7MHz CARRIER DETECT
Q723(A-10)
2SC1623
Q724(A-9)
2SC1623
Q725(A-9)
FMW1
1.7MHz CARRIER DETECT
Q726(A-9)
2SC1623
FL701
1.5M BPF
FL702
1.7M BPF
L+R
L-R
R MATRIX
VCA
DET
AGC DET
VCO
V/I
LIM
HOLD 1
HOLD 2
LPF
MUTE DET
D.O DEF
PG DOVS
μ COMP
PB AMP
4.3V REG
REC MUTE
REC RF
GND1
GND2
IREF
VREF
Vc
HI-Z
REC ON
EE



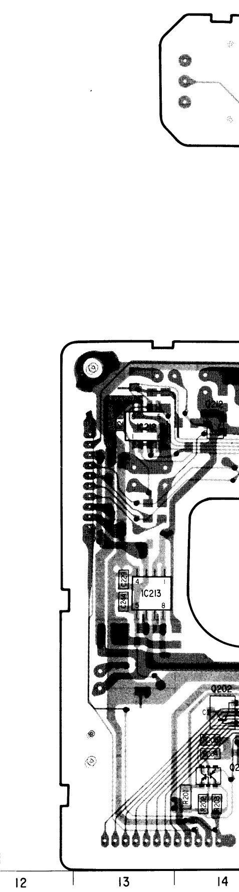
IC703 (C-10)
μPC358G
①-③ INVERTER
⑤-⑦ L+R MATRIX
IC704 (D-8)
MC14066BF
①-④ AFM L OUT SELECT
⑧-⑪ REC/PB SELECT
IC705 (C-9)
μPC358G2
①-③ INVERTER
⑤-⑦ L MATRIX
IC706
SW1
SW2
SW3
SW4
BIAS
AVDD
AVSS
DVSS
TEST
DVDD
STBY
SW1 & SW3
SW2 & SW4
ANALOG SW CONTROL
PC
1/N
1/2¹³
1/2¹³
1/M
MODE CONTROL
IC708 (F-2)
CXD2106Q
PLL
X701
Q728 (D-9) DTA144EK INVERTER
Q710 (D-14) DTA144EK INVERTER
Q732 (F-3) 2SC1623 AMP
Q733 (E-3) 2SC1623 AMP
Q715 (C-13) DTC144EK 1.7MHz MUTE
Q713 (A-13) 2SC1623
Q714 (A-13) 2SC1623
MIX AMP
REC AFM
1.7M LEVEL
L707 47μH
L706 47μH
L709 47μH
L703 10μH
CN701
1 REC AFM RF
2 AFM GND
3 PB RF
TO VI-100 BOARD (1/2) CN410
(See Page 136)
CN702
10 1.7M CAR ON/OFF
9 PB MT/TH
8 AFM R OUT
7 AFM GND
6 AFM L OUT
5 AFM 5V
4 MONO/STEREO DET
3 MARKER MUTE
2 PB/REC
1 RF SWP
TO PC-35P BOARD CN317
(See Page 191)
IC706
L+R
L-R
L MATRIX
R MATRIX
IC707 (D-9)
MC14066BF
①-④ AFM R OUT SELECT
⑧-⑪ REC/PB SELECT
Q231 (B-1) 2SB1121 8V SWITCH
Q232 (B-1) DTC144EK 8V SWITCH
Q234 (C-3) DTC114TK ATT
IC232 (B-3) NJM2073M SPEAKER AMP
IC231 (C-2) M5201FP LINE/PHONE SWITCH
Q233 (C-22) DTC144EK INVERTER
Q235 (B-3) FMG4 MUTE
SPEAKER
CN232
1 SP OUT ⊕
2 SP OUT ⊖
CN703
1 AFM R IN
2 SP/LP
3 AFM MONO IN
4 CAM/LINE
5 AFM L IN
6 INPUT SEL
TO PC-35P BOARD CN316
(See Page191)
CN231
8 V REF 2
7 SP ON/OFF
6 MUTE
5 SP ATT
4 PHONE OUT
3 LINE OUT
2 AUDIO GND
1 AUDIO 8V
TO PC-35P BOARD CN314
(See Page 191)
Q724 (A-9) 2SC1623
Q725 (A-9) FMW1
Q726 (A-9) 2SC1623
Q727 (A-9) 2SA812
1.7MHz CARRIER DETECT
L705 47μH
EE

IR-20P board printed wiring board is shown on page 185 (PCM AUDIO)

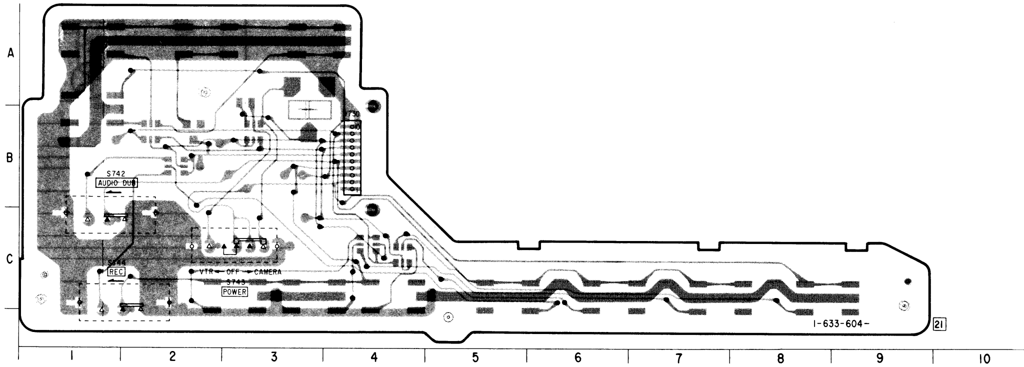
FD-13P BOARD (COMPONENT SIDE)

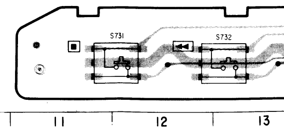

S215
EFECT LEVEL
S211
SHUTTER SPEED
10000
4000
1000
250
100
60
W201
VR201
IRIS
FOCUS
MANU
AUTO
CN211
VR212
BALANCE
MANU
AUTO
VR211
REC LEVEL
Q211
C217
C216
W202
CN212
D201
CN205
CN206
1-633-601-
21
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
12

FD-13P BO

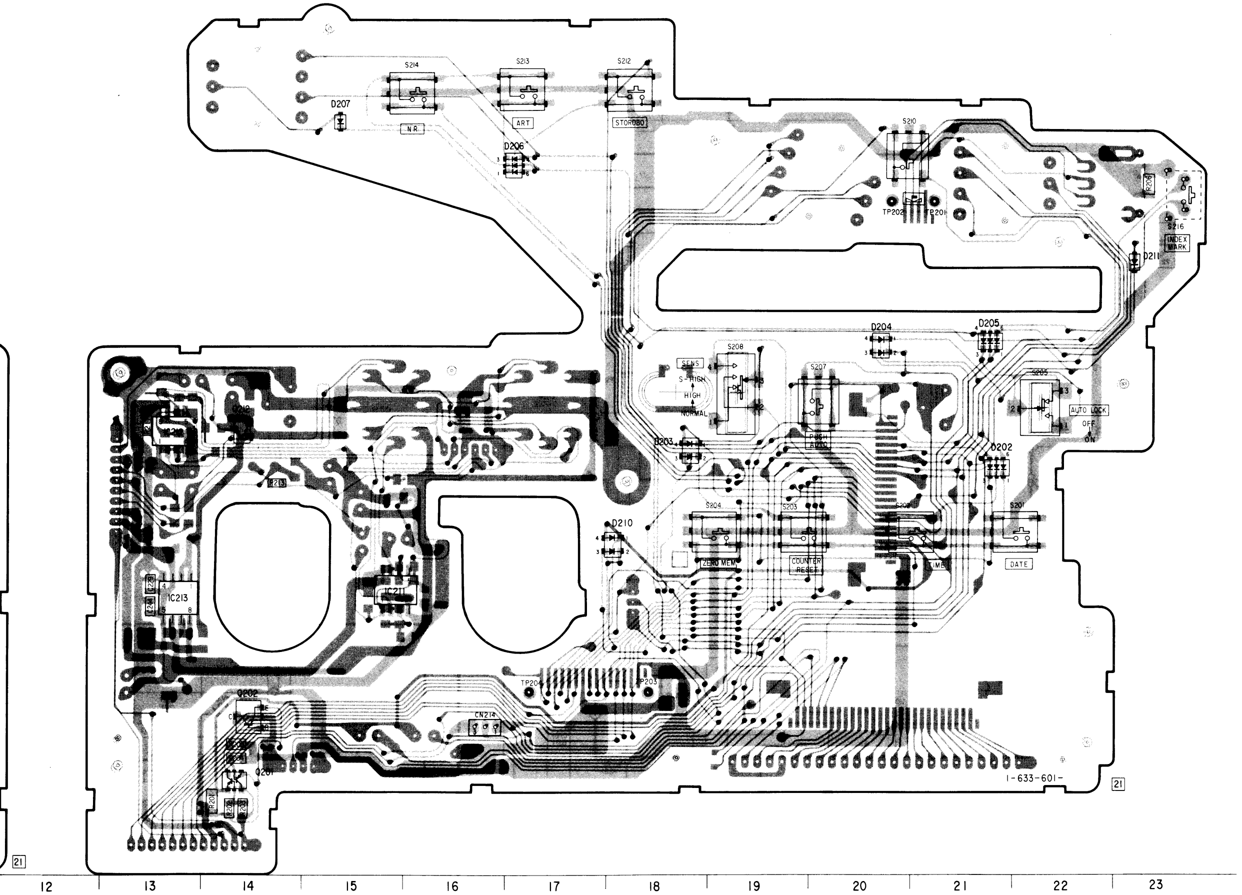

IC213
Q202
13
14

VK-2P BOARD (COMPONENT SIDE)

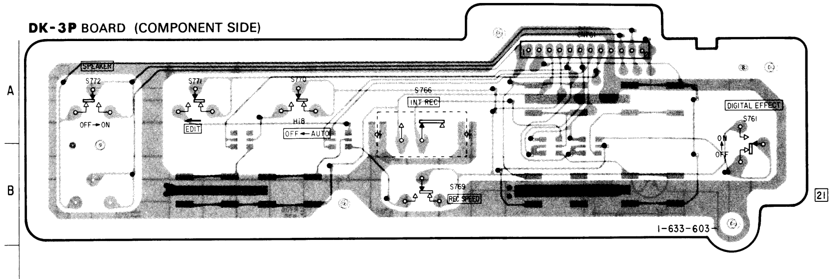

S742
AUDIO DUB
S744
REC
VTR
OFF
CAMERA
S743
POWER
1-633-604-
21
A
B
C
1
2
3
4
5
6
7
8
9
10


S731
S732
11
12
13

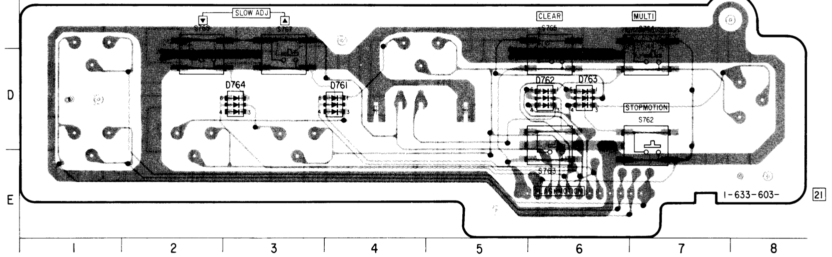
FD-13P BOARD (CONDUCTOR SIDE)


S214
S213
S212
D207
N.R.
ART
STOROBO
D206
S210
TP202
TP201
R216
S216
INDEX MARK
D211
D204
D205
SENS
S208
S-HIGH
HIGH
NORMAL
S207
PUSH AUTO
S205
AUTO LOCK
OFF
ON
D203
D202
IC213
IC211
D210
S204
ZERO MEM
S203
COUNTER RESET
S202
TIME
S201
DATE
TP204
TP203
CN214
Q202
Q201
1-633-601-
21
12
13
14
15
16
17
18
19
20
21
22
23

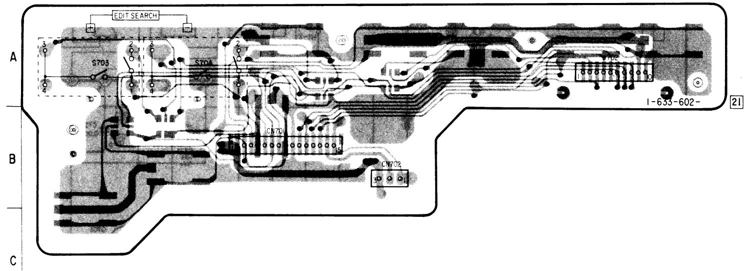
DK-3P BOARD (COMPONENT SIDE)


A
B
SPEAKER
S772
OFF→ON
S771
EDIT
S770
HiB
OFF←AUTO
S766
INT REC
S769
REC SPEED
DIGITAL EFFECT
S761
ON
OFF
1-633-603-
21

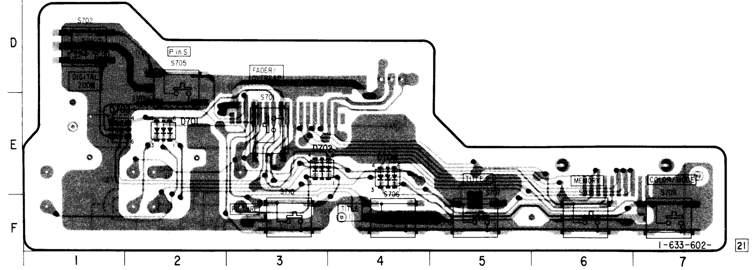
DK-3P BOARD (CONDUCTOR SIDE)


C
D
E
SLOW ADJ
CLEAR
MULTI
D764
D761
D762
D763
STOPMOTION
S762
S765
1-633-603-
21
1
2
3
4
5
6
7
8

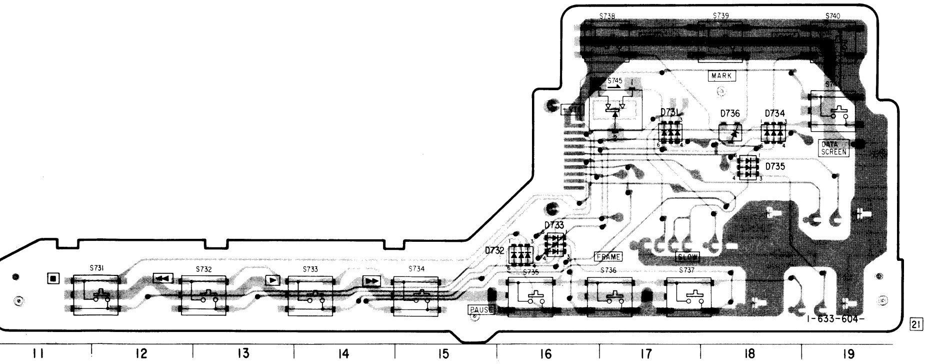
CK-18P BOARD (COMPONENT SIDE)


A
B
C
EDIT SEARCH
S703
S704
CN701
CN702
1-633-602-
21

CK-18P BOARD (CONDUCTOR SIDE)


D
E
F
S702
P in S
S705
DIGITAL ZOOM
FADER
D701
D702
S706
TITLE
MEMORY
COLOR/SHADE
S708
1-633-602-
21
1
2
3
4
5
6
7

VK-2P BOARD (CONDUCTOR SIDE)


S738
S739
S740
S745
MARK
D731
D736
D734
DATA SCREEN
D735
D732
D733
FRAME
SLOW
S731
S732
S733
S734
S735
S736
S737
PAUSE
1-633-604-
21
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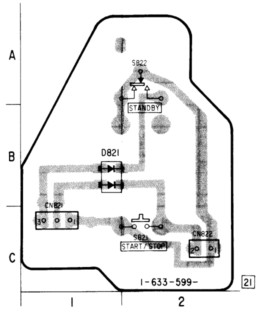
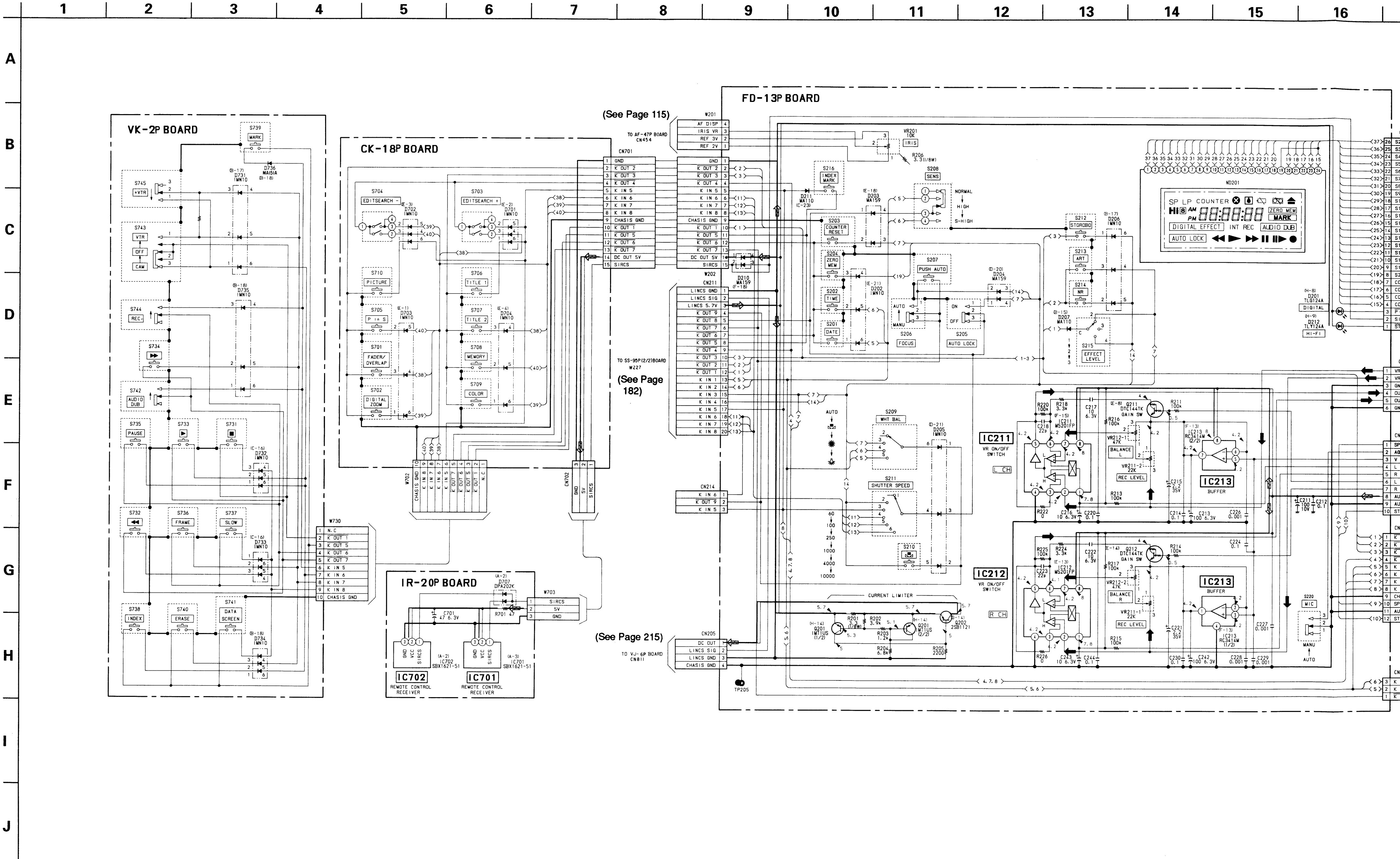
18
19

SW-113P BOARD


A
B
C
S822
STANDBY
D821
CN821
S821
START/STOP
CN822
1-633-599-
21
1
2



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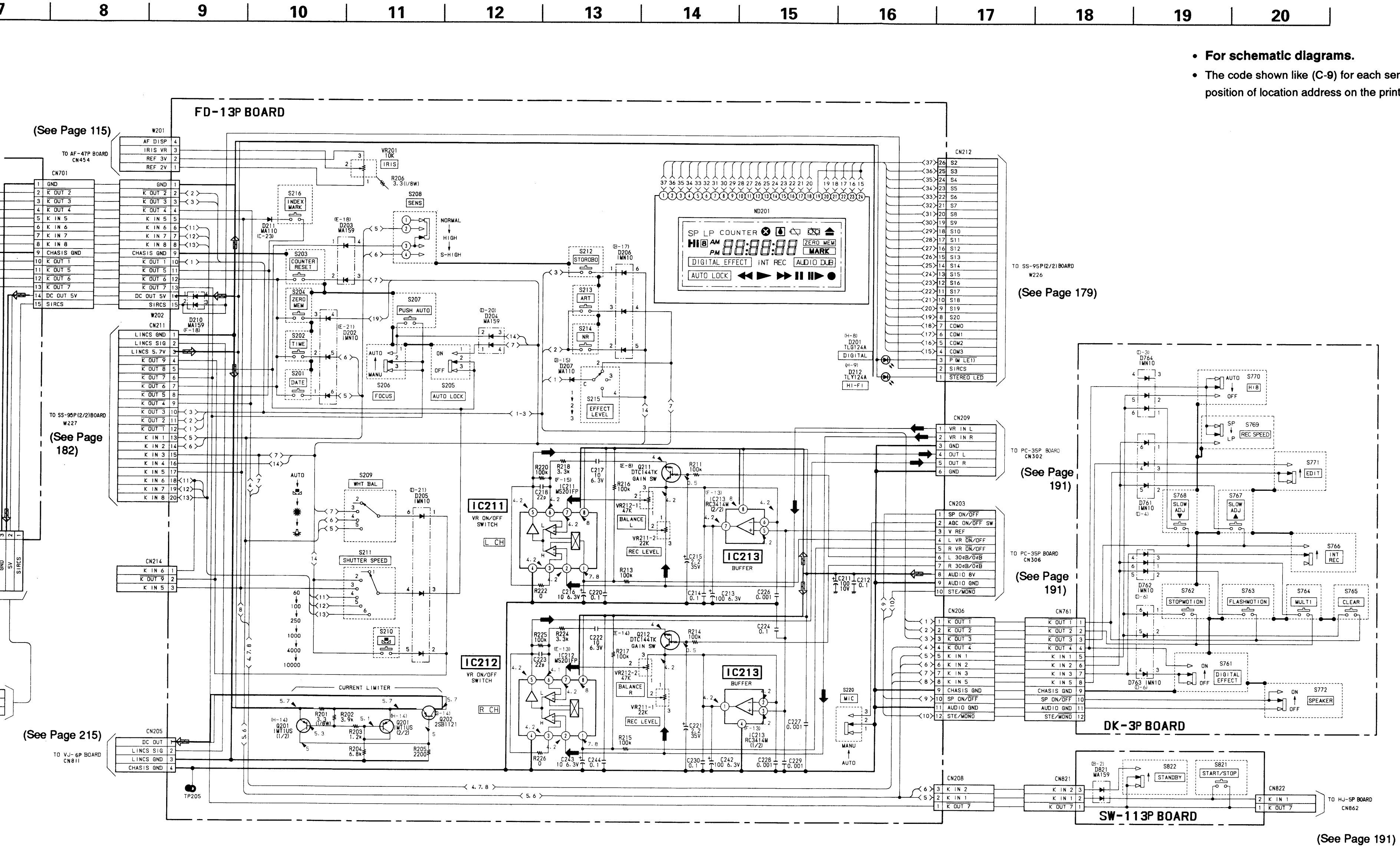
A
B
C
D
E
F
G
H
I
J
VK-2P BOARD
S739 MARK
D736 MA151A
S745 +VTR
D731 1MN10
S743 VTR OFF CAM
S744 REC
D735 1MN10
S734
S742 AUDIO DUB
S735 PAUSE
S733
S731
D732 1MN10
S732
S736 FRAME
S737 SLOW
D733 1MN10
S738 INDEX
S740 ERASE
S741 DATA SCREEN
D734 1MN10
W730
N.C
K OUT 1
K OUT 5
K OUT 6
K OUT 7
K IN 5
K IN 6
K IN 7
K IN 8
CHASIS GND
CK-18P BOARD
S704 EDITSEARCH -
D702 1MN10
S703 EDITSEARCH +
D701 1MN10
S710 PICTURE
S706 TITLE 1
S705 P in S
D703 1MN10
S707 TITLE 2
D704 1MN10
S701 FADER/OVERLAP
S708 MEMORY
S702 DIGITAL ZOOM
S709 COLOR
W702
CN702
GND
5V
SIRCS
CN701
GND
K OUT 2
K OUT 3
K OUT 4
K IN 5
K IN 6
K IN 7
K IN 8
CHASIS GND
K OUT 1
K OUT 5
K OUT 6
K OUT 7
DC OUT 5V
SIRCS
IR-20P BOARD
D707 DPA202K
C701 47 6.3V
R701 47
W703
IC702 REMOTE CONTROL RECEIVER SBX1621-51
IC701 REMOTE CONTROL RECEIVER SBX1621-51
(See Page 115)
TO AF-47P BOARD CN454
W201
AF DISP
IRIS VR
REF 3V
REF 2V
W202
CN211
LINCS GND
LINCS SIG
LINCS 5.7V
TO SS-95P(2/2)BOARD W227
(See Page 182)
D210 MA159
CN214
(See Page 215)
TO VJ-6P BOARD CN811
CN205
DC OUT
LINCS SIG
LINCS GND
CHASIS GND
TP205
FD-13P BOARD
VR201 10K IRIS
R206 3.3 1/8W
S208 SENS
NORMAL
HIGH
S-HIGH
S216 INDEX MARK
D211 MA110
D203 MA159
S203 COUNTER RESET
S204 ZERO MEM
D202 1MN10
S202 TIME
S201 DATE
S207 PUSH AUTO
D204 MA159
S206 FOCUS
S205 AUTO LOCK
AUTO
MANU
ON
OFF
S212 STROBO
D206 1MN10
S213 ART
S214 NR
D207 MA110
S215 EFFECT LEVEL
ND201
SP LP COUNTER
ZERO MEM
MARK
DIGITAL EFFECT
INT REC
AUDIO DUB
AUTO LOCK
D201 TLG124A DIGITAL
D212 TLY124A HI-FI
S209 WHT BAL
D205 1MN10
S211 SHUTTER SPEED
60
100
250
1000
4000
10000
S210
CURRENT LIMITER
Q201 IMT1US
R201 3.3 1/8W
R202 3.9k
R203 1.2k
R204 6.8k
R205 2200
Q202 2SB1121
IC211 VR ON/OFF SWITCH
L CH
R220 100k
R218 3.3k
C218 22p
IC211 M5201FP
C217 10 6.3V
Q211 DTC144TK GAIN SW
R216 100k
VR212-1 47K
BALANCE L
VR211-2 22K
REC LEVEL
R211 100k
IC213 RC3414M (2/2)
IC213 BUFFER
C215 2.2 35V
R213 100k
R222 0
C216 10 6.3V
C220 0.1
C214 0.1
C213 100 6.3V
C226 0.001
C211 100 10V
C212 0.1
IC212 VR ON/OFF SWITCH
R CH
R225 100k
R224 3.3k
C223 22p
IC212 M5201FP
C222 10 6.3V
Q212 DTC144TK GAIN SW
R217 100k
VR212-2 47K
BALANCE R
VR211-1 22K
REC LEVEL
R214 100k
C224 0.1
IC213 BUFFER
IC213 RC3414M (1/2)
C221 2.2 35V
R215 100k
R226 0
C243 10 6.3V
C244 0.1
C230 0.1
C242 100 6.3V
C228 0.001
C229 0.001
C227 0.001
S220 MIC
MANU
AUTO

- **For schematic diagrams.**
- The code shown like (C-9) for each semiconductor indicates the position of location address on the printed wiring board.


7
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20
FD-13P BOARD
(See Page 115)
TO AF-47P BOARD CN454
W201
CN701
W202
CN211
TO SS-95P(2/2)BOARD W227
(See Page 182)
CN214
CN205
TO VJ-6P BOARD CN811
(See Page 215)
TP205
VR201 10K IRIS
S216 INDEX MARK
S208 SENS
NORMAL
HIGH
S-HIGH
S203 COUNTER RESET
S204 ZERO MEM
S202 TIME
S201 DATE
S207 PUSH AUTO
S206 FOCUS
S205 AUTO LOCK
S212 STOROBO
S213 ART
S214 NR
S215 EFFECT LEVEL
ND201
SP LP COUNTER
ZERO MEM
MARK
DIGITAL EFFECT
INT REC
AUDIO DUB
AUTO LOCK
D201 TLG124A DIGITAL
D212 TLY124A HI-FI
CN212
TO SS-95P(2/2)BOARD W226
(See Page 179)
S209 WHT BAL
S211 SHUTTER SPEED
S210
IC211 VR ON/OFF SWITCH
L CH
IC212 VR ON/OFF SWITCH
R CH
IC213 BUFFER
BALANCE L
REC LEVEL
BALANCE R
CURRENT LIMITER
S220 MIC
MANU
AUTO
CN209
TO PC-35P BOARD CN302
(See Page 191)
CN203
TO PC-35P BOARD CN306
(See Page 191)
CN206
CN208
CN761
DK-3P BOARD
S770 HI8
S769 REC SPEED
S771 EDIT
S768 SLOW ADJ
S767 SLOW ADJ
S766 INT REC
S762 STOPMOTION
S763 FLASHMOTION
S764 MULTI
S765 CLEAR
S761 DIGITAL EFFECT
S772 SPEAKER
CN821
S822 STANDBY
S821 START/STOP
SW-113P BOARD
CN822
TO HJ-5P BOARD CN862
(See Page 191)

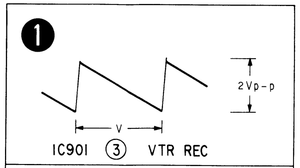
- **SIGNAL PATH (ANALOG)**

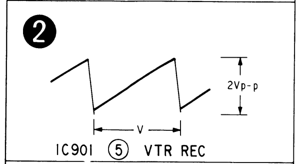
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				

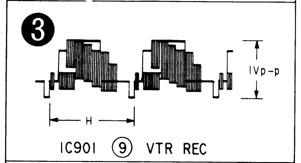
VF-13P (ELECTRICAL VIEW FINDER), TL-18P (TALLY LED), TL-19P (TALLY LED) PRINTED WIRING DIAGRAMS

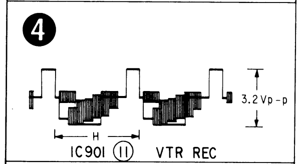
— Ref. No. VF-13P BOARD: 1000 series, TL-18P BOARD: 2000 series, TL-19P BOARD: 4000 series —

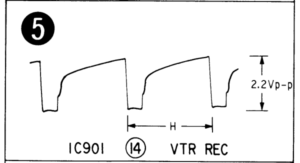
VF-13P BOARD

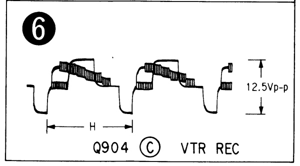




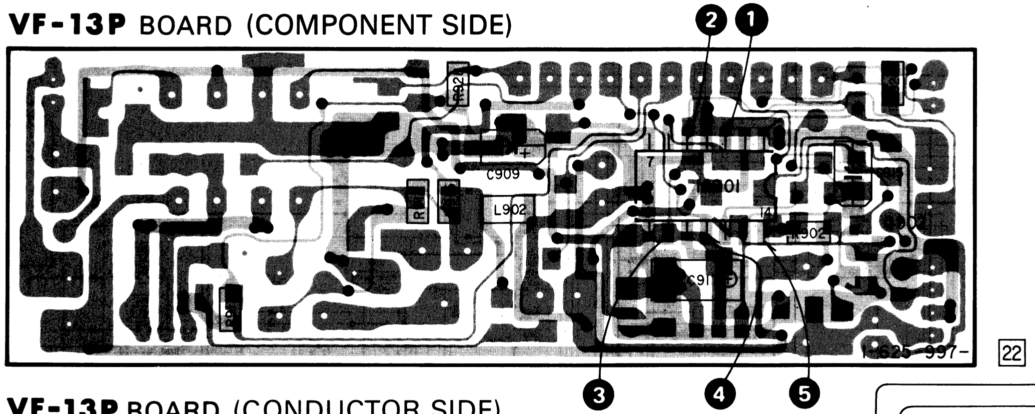




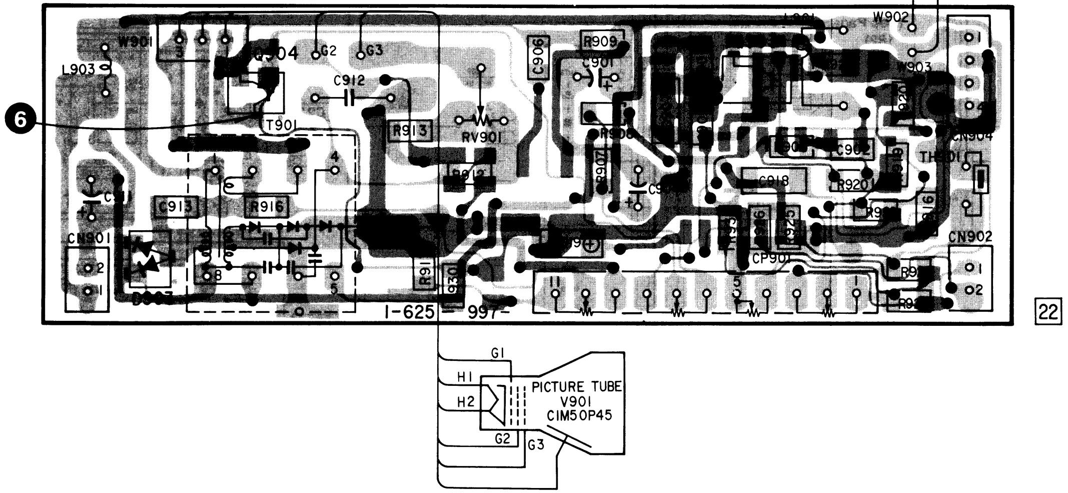




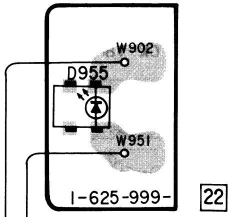
VF-13P BOARD (COMPONENT SIDE)


❷
❶
C909
L902
7
IC901
14
R902
1-625-997-
22
❸
❹
❺

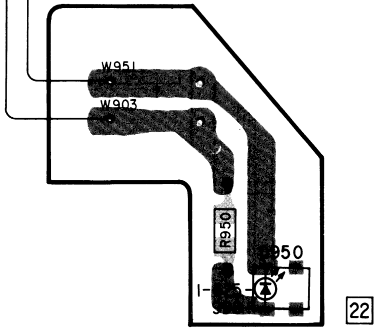
VF-13P BOARD (CONDUCTOR SIDE)


W901
L903
Q904
G2
G3
C912
❻
T901
C906
R909
C901
R913
RV901
R908
R912
C913
R916
4
8
5
CN901
D907
R911
R930
1-625-997-
W902
W903
CN904
TH901
C902
C918
R920
R916
CP901
CN902
1
2
22
G1
H1
H2
G2
G3
PICTURE TUBE
V901
CIM50P45

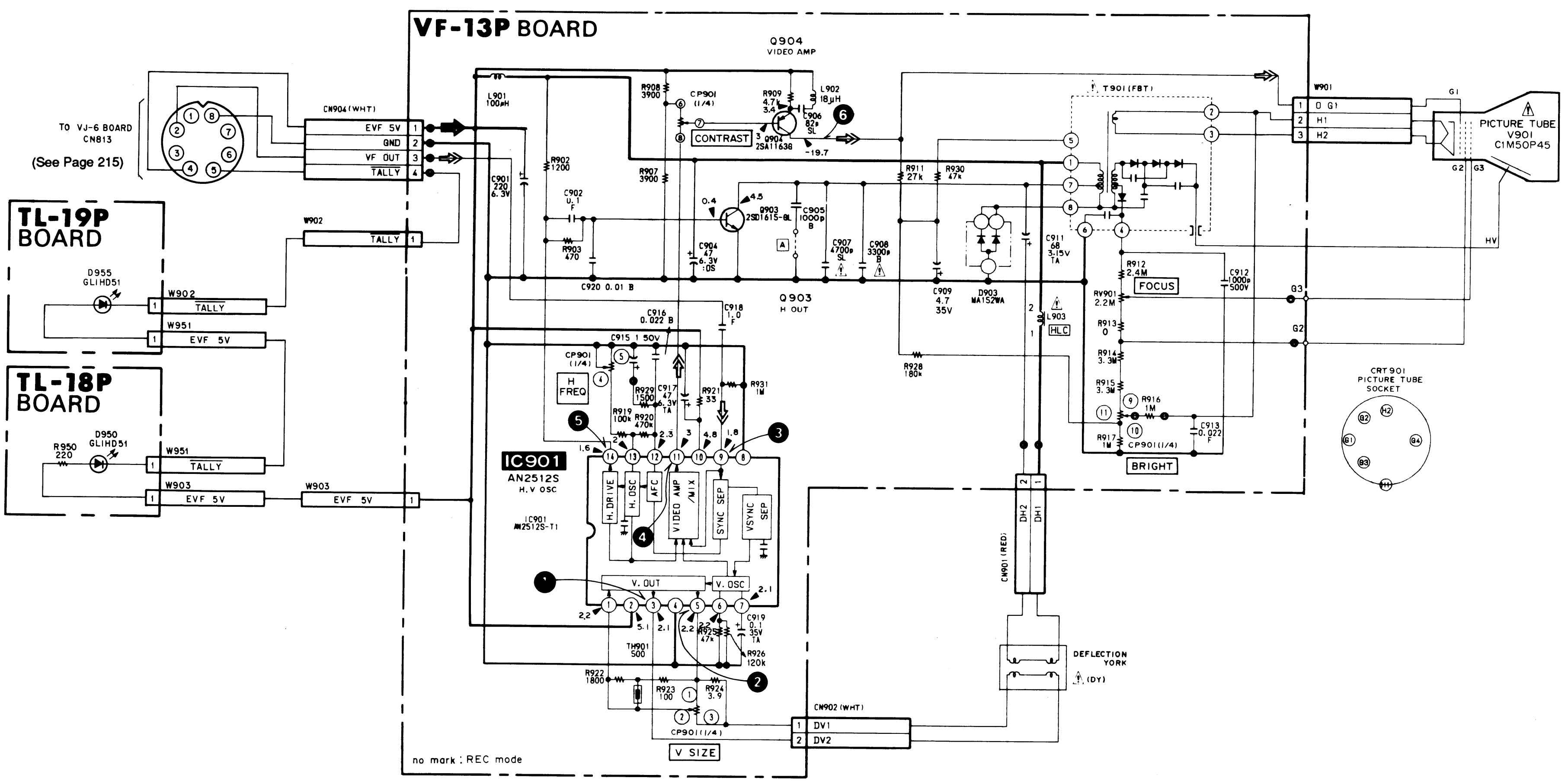
TL-19P BOARD (COMPONENT SIDE)


W902
D955
W951
1-625-999-
22

TL-18P BOARD (CONDUCTOR SIDE)

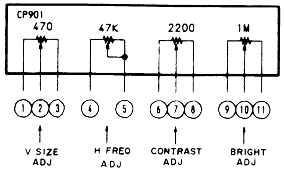

W951
W903
R950
D950
22

— Ref. No. VF-13P BOARD: 1000 series, TL-18P BOARD: 2000 series, TL-19P BOARD: 4000 series —



VF-13P BOARD
TL-19P BOARD
TL-18P BOARD
TO VJ-6 BOARD CN813
(See Page 215)
CN904 (WHT)
EVF 5V
GND
VF OUT
TALLY
W902
TALLY
W951
EVF 5V
W903
EVF 5V
D955 GL1HD51
D950 GL1HD51
R950 220
Q904 VIDEO AMP
2SA1163B
Q903 H OUT
2SD1615-GL
L901 100μH
R908 3900
CP901 (1/4)
CONTRAST
R909 4.7k
L902 18μH
C906 82p SL
-19.7
R902 1200
C901 220 6.3V
C902 0.1 F
R903 470
R907 3900
C904 47 6.3V :OS
C905 1000p B
C907 4700p SL
C908 3300p B
C920 0.01 B
R911 27k
R930 47k
C909 4.7 35V
D903 MA152WA
C911 68 3.15V TA
T901 (FBT)
W901
G1
H1
H2
PICTURE TUBE V901 C1M50P45
G2
G3
HV
R912 2.4M
FOCUS
RV901 2.2M
R913 0
R914 3.3M
R915 3.3M
R916 1M
R917 1M
C912 1000p 500V
C913 0.022 F
BRIGHT
R928 180k
L903
HLC
C916 0.022 B
C918 1.0 F
C915 1 50V
H FREQ
R929 1500
C917 47 6.3V TA
R921 33
R931 1M
R919 100k
R920 470k
IC901 AN2512S H, V OSC
IC901 AN2512S-T1
H. DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
V. OUT
V. OSC
TH901 500
R925 47k
C919 0.1 35V TA
R926 120k
R922 1800
R923 100
R924 3.9
CP901 (1/4)
V SIZE
CN902 (WHT)
DV1
DV2
CN901 (RED)
DH1
DH2
DEFLECTION YORK
(DY)
CRT901 PICTURE TUBE SOCKET
no mark : REC mode

CP901



CP901
470
47K
2200
1M
V SIZE ADJ
H FREQ ADJ
CONTRAST ADJ
BRIGHT ADJ

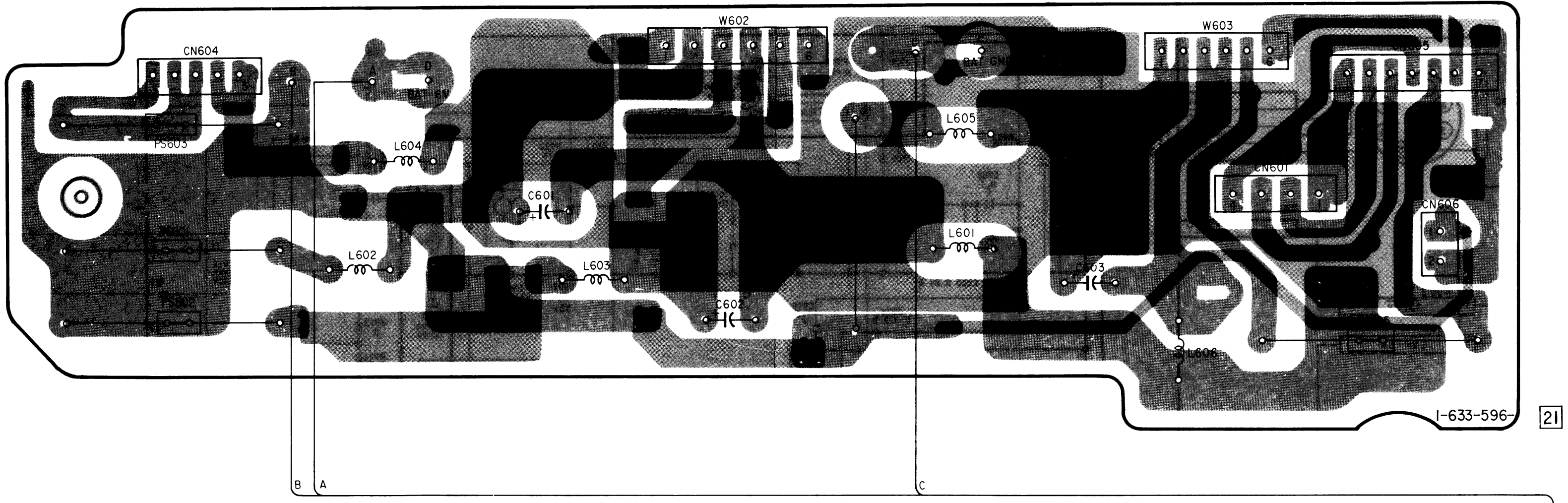
• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC				
PB		⇨		

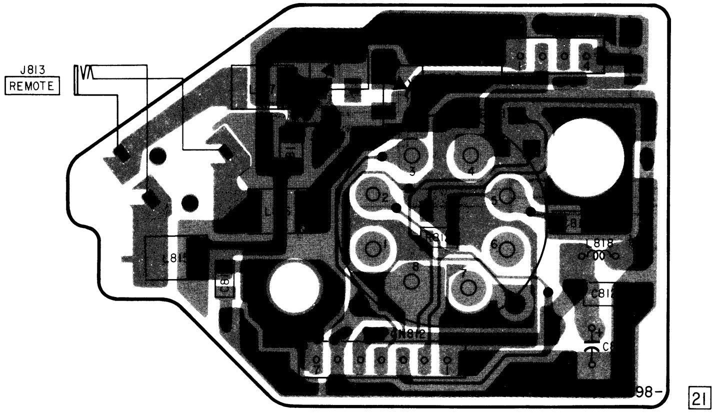
FU-70P (POWER), DC-25P (DC JACK), VJ-6P (EVF CONNECTOR, REMOTE JACK) PRINTED WIRING DIAGRAMS

— Ref. No. FU-70P BOARD: 7000 series, DC-25P BOARD: 8000 series, VJ-6P BOARD: 9000 series —

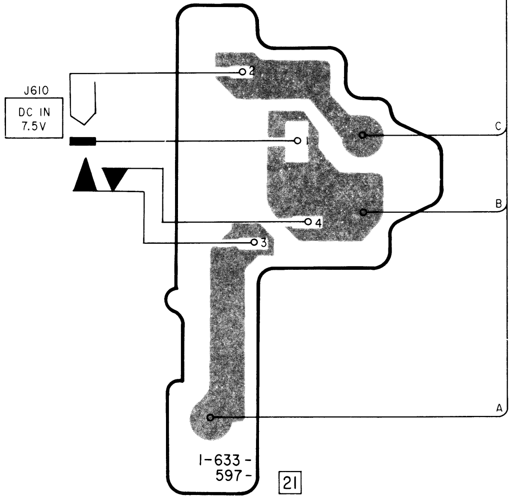
FU-70P BOARD (CONDUCTOR SIDE)


CN604
PS603
PS601
PS602
W602
W603
A
D
BAT 6V
C
E
BAT GND
L604
L605
C601
CN601
CN606
L601
L602
L603
C602
C603
L606
1-633-596-
21
B
A
C

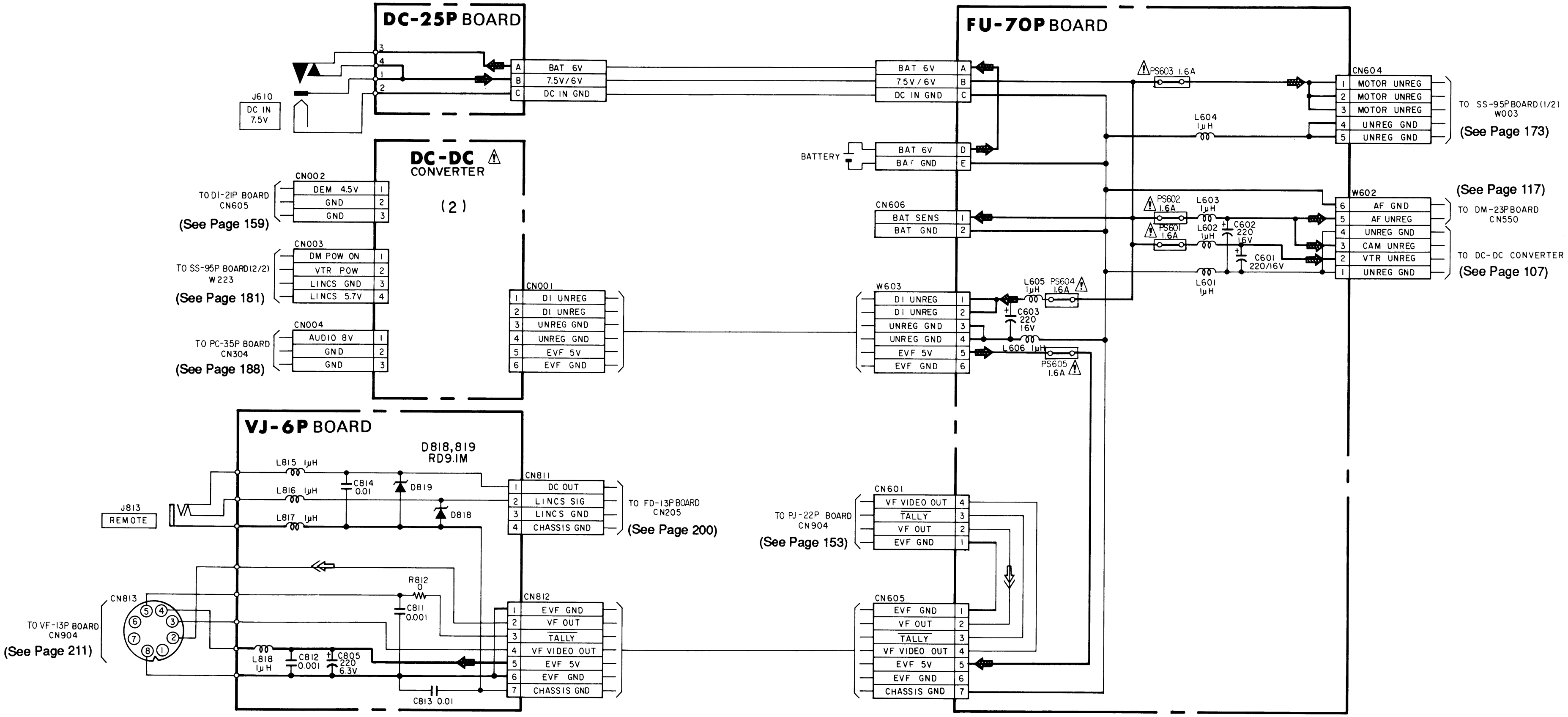
VJ-6P BOARD (CONDUCTOR SIDE)


J813
REMOTE
L815
L818
C812
CN812
98-
21

DC-25P BOARD (CONDUCTOR SIDE)


J610
DC IN
7.5V
2
1
4
3
C
B
A
1-633-
597-
21

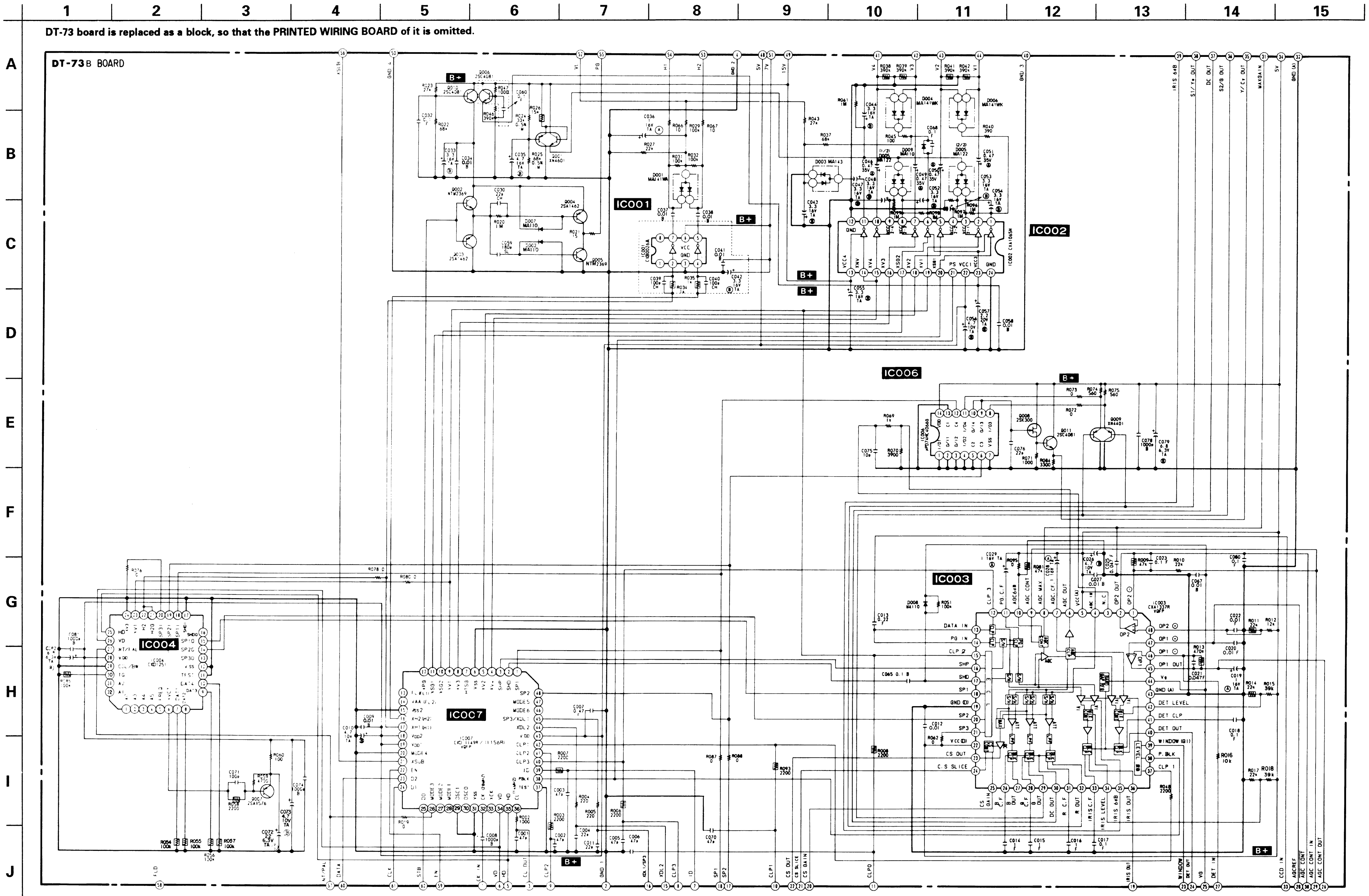
— Ref. No. FU-70P BOARD: 7000 series, DC-25P BOARD: 8000 series, VJ-6P BOARD: 9000 series —


DC-25P BOARD
J610
DC IN 7.5V
BAT 6V
7.5V/6V
DC IN GND
DC-DC CONVERTER
(2)
CN002
DEM 4.5V
GND
GND
TO DI-21P BOARD CN605
(See Page 159)
CN003
DM POW ON
VTR POW
LINCS GND
LINCS 5.7V
TO SS-95P BOARD(2/2) W223
(See Page 181)
CN004
AUDIO 8V
GND
GND
TO PC-35P BOARD CN304
(See Page 188)
CN001
DI UNREG
DI UNREG
UNREG GND
UNREG GND
EVF 5V
EVF GND
VJ-6P BOARD
D818,819 RD9.1M
L815 1μH
L816 1μH
L817 1μH
C814 0.01
D819
D818
J813
REMOTE
CN811
DC OUT
LINCS SIG
LINCS GND
CHASSIS GND
TO FD-13P BOARD CN205
(See Page 200)
R812 0
C811 0.001
CN813
TO VF-13P BOARD CN904
(See Page 211)
L818 1μH
C812 0.001
C805 220 6.3V
C813 0.01
CN812
EVF GND
VF OUT
TALLY
VF VIDEO OUT
EVF 5V
EVF GND
CHASSIS GND
FU-70P BOARD
BAT 6V
7.5V/6V
DC IN GND
BATTERY
BAT 6V
BAT GND
CN606
BAT SENS
BAT GND
PS603 1.6A
L604 1μH
CN604
MOTOR UNREG
MOTOR UNREG
MOTOR UNREG
UNREG GND
UNREG GND
TO SS-95P BOARD(1/2) W003
(See Page 173)
W602
AF GND
AF UNREG
UNREG GND
CAM UNREG
VTR UNREG
UNREG GND
(See Page 117)
TO DM-23P BOARD CN550
TO DC-DC CONVERTER
(See Page 107)
PS602 1.6A
PS601 1.6A
L603 1μH
L602 1μH
C602 220 16V
C601 220/16V
L601 1μH
W603
DI UNREG
DI UNREG
UNREG GND
UNREG GND
EVF 5V
EVF GND
L605 1μH
PS604 1.6A
C603 220 16V
L606 1μH
PS605 1.6A
CN601
VF VIDEO OUT
TALLY
VF OUT
EVF GND
TO PJ-22P BOARD CN904
(See Page 153)
CN605
EVF GND
VF OUT
TALLY
VF VIDEO OUT
EVF 5V
EVF GND
CHASSIS GND

• SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB		⇨		

DT-73 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.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A
B
C
D
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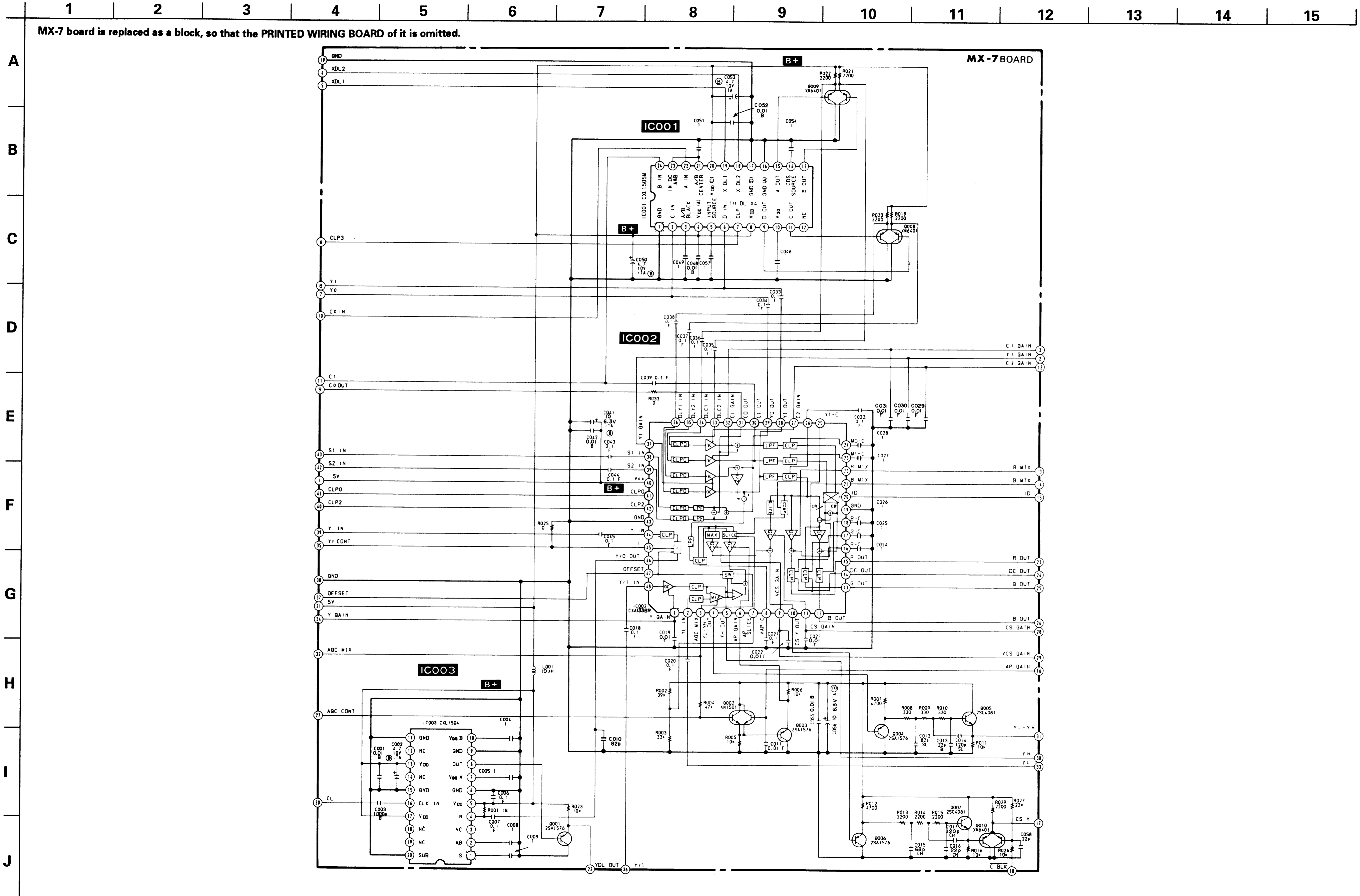
F
G
H
I
J
DT-73B BOARD
B+
IC001
IC002
IC003
IC004
IC006
IC007
IC001 CXD1026A
IC002 CXA1065M
IC003 CXA1337R
IC004 CXD1125
IC006 μPD74HC4066G
IC007 CXD1149R/1156R
Q002 NTM2369
Q003 2SA1462
Q004 2SA1462
Q005 NTM2369
Q006 2SC4081
Q007 2SA1576
Q008 2SK300
Q009 XN4401
Q010 2SC4081
Q011 2SC4081
Q00C XN4601
D001 MA141WA
D002 MA110
D003 MA143
D004 MA141WK
D005 MA122
D006 MA141WK
D007 MA110
D008 MA110
D009 MA110
XSUB
GND 4
V1
PG
H1
H2
GND 2
5V
7V
15V
V4
V3
V2
GND 3
IRIS 6dB
S1/Vφ OUT
DC OUT
S2/B OUT
Y/Cφ OUT
MAXGAIN
5V
GND (A)
FLD
NT/PAL
DATA
CLK
STB
EN
CK IN
VD
HD
CL OUT
CLP2
GND 1
XDL1/SP3
XDL2
CLP3
ID
SP1
SP2
CLP1
CS OUT
CS SLICE
CS GAIN
CLP0
IRIS OUT
WINDOW
DET OUT
VG
DET IN
CCD IN
AGCREF
AGC CONT IN
AGC CONT OUT
DATA IN
PG IN
CLP P
SHP
SHD
SP1
GND (D)
SP2
SP3
VCC (D)
CS OUT
C.S SLICE
OP2 ⊕
OP1 ⊕
OP1 ⊖
OP1 OUT
Vφ
GND (A)
DET LEVEL
DET CLP
DET OUT
WINDOW (B1)
P. BLK
CLP 1
SP2
MODE5
MODE6
SP3/XDL1
XDL2
VDD
CLP1
CLP2
CLP3
ID
PBLK
TES
EN
D2
D1
VDD
XSUB
MODE4
XAA (FL2)
XSS2
XH2 (H2)
XH1 (H1)
VDD2
VDD1
HD
VD
NT/PAL
VDD
COL/BW
TG
A1
A2
SP1D
SP2D
SP3D
TEST
DATA
DATA3

MX-7 (CAMERA MATRIX) SCHEMATIC DIAGRAMS

MX-7 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.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14
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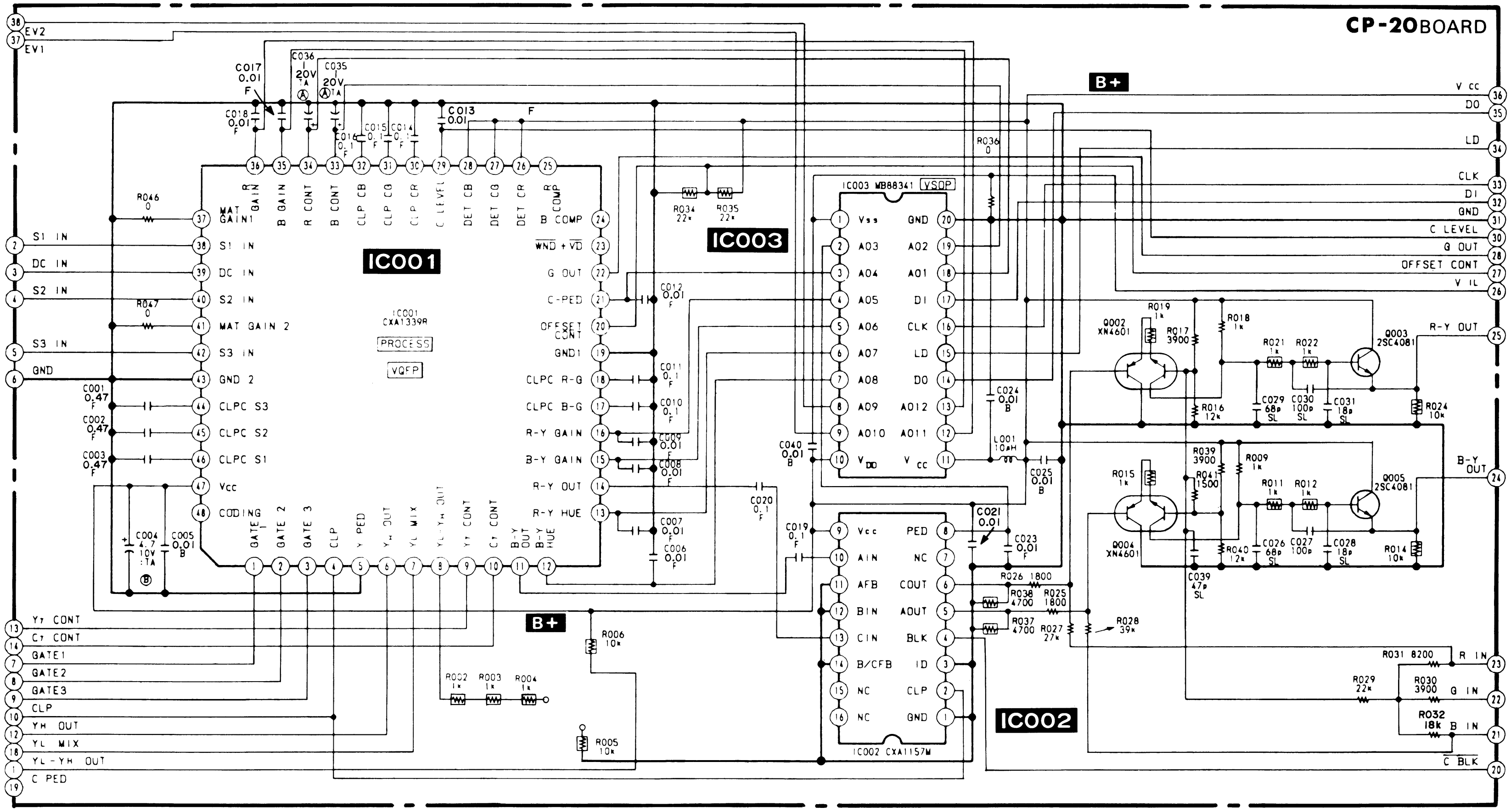
A
B
C
D
E
F
G
H
I
J
MX-7 BOARD
IC001
IC001 CXL1505M
IC002
IC002 CXA1338R
IC003
IC003 CXL1504
B+
GND
XDL2
XDL1
CLP3
Y1
Y0
C0 IN
C1
C0 OUT
S1 IN
S2 IN
5V
CLP0
CLP2
Y IN
Yr CONT
GND
OFFSET
5V
Y GAIN
AGC MIX
AGC CONT
CL
YDL OUT
Yr1
C1 GAIN
Y1 GAIN
C2 GAIN
R MTX
B MTX
ID
R OUT
DC OUT
G OUT
B OUT
CS GAIN
VCS GAIN
AP GAIN
YL-YH
YH
YL
CS Y
C BLK
Q009 XN6401
Q008 XN6401
Q002 XN1501
Q003 2SA1576
Q004 2SA1576
Q005 2SC4081
Q001 2SA1576
Q006 2SA1576
Q007 2SC4081
Q010 XN6401
L001 10μH
C010 82p
C055 0.01 B
C056 10 6.3V
CLP
LPF
MAX
SLICE
SW
MIX

CP-20 (CAMERA PROCESS) SCHEMATIC DIAGRAMS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

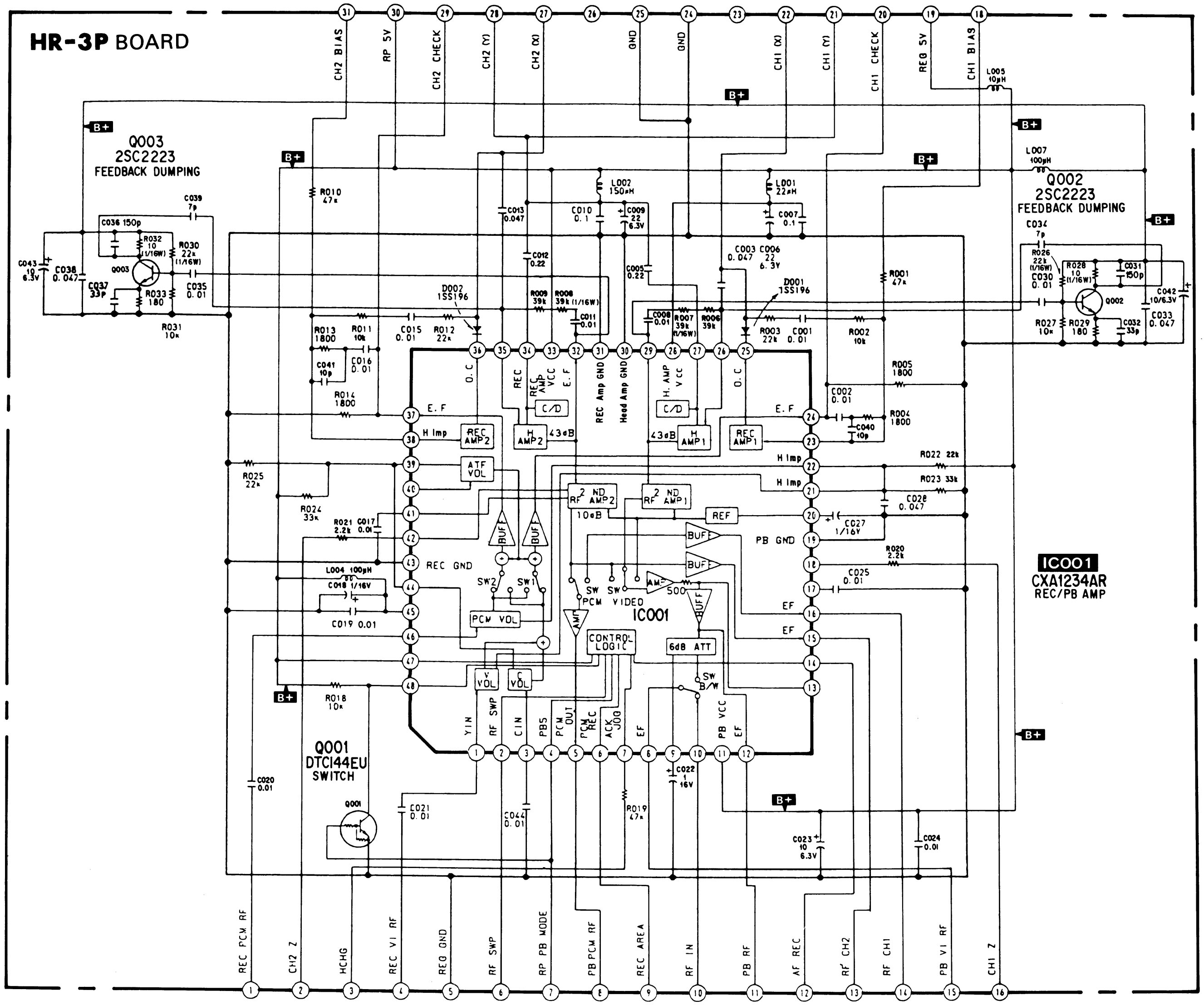
A B C D E F G H I J

CP-20 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.


CP-20BOARD
IC001
IC001 CXA1339R
PROCESS
VQFP
IC002
IC002 CXA1157M
IC003
IC003 MB88341 VSOP
B+
B+
EV2
EV1
S1 IN
DC IN
S2 IN
S3 IN
GND
Y7 CONT
C7 CONT
GATE1
GATE2
GATE3
CLP
YH OUT
YL MIX
YL-YH OUT
C PED
V cc
DO
LD
CLK
DI
GND
C LEVEL
G OUT
OFFSET CONT
V IL
R-Y OUT
B-Y OUT
R IN
G IN
B IN
C BLK
R GAIN
B GAIN
R CONT
B CONT
CLP CB
CLP CG
CLP CR
C LEVEL
DET CB
DET CG
DET CR
R COMP
MAT GAIN1
S1 IN
DC IN
S2 IN
MAT GAIN 2
S3 IN
GND 2
CLPC S3
CLPC S2
CLPC S1
Vcc
CODING
B COMP
WND + VD
G OUT
C-PED
OFFSET CONT
GND1
CLPC R-G
CLPC B-G
R-Y GAIN
B-Y GAIN
R-Y OUT
R-Y HUE
GATE 1
GATE 2
GATE 3
CLP
Y PED
YH OUT
YL MIX
YL-YH OUT
Y7 CONT
C7 CONT
B-Y OUT
B-Y HUE
Vss
A03
A04
A05
A06
A07
A08
A09
A010
VDD
GND
A02
A01
DI
CLK
LD
DO
A012
A011
V cc
Vcc
AIN
AFB
BIN
CIN
B/CFB
NC
NC
PED
NC
COUT
AOUT
BLK
ID
CLP
GND
C017 0.01 F
C018 0.01 F
C036 1 20V TA
C035 1 20V TA
C016 0.1 F
C015 0.1 F
C014 0.1 F
C013 0.01 F
R046 0
R047 0
C001 0.47 F
C002 0.47 F
C003 0.47 F
C004 4.7 10V TA
C005 0.01 B
R034 22k
R035 22k
C012 0.01 F
C011 0.1 F
C010 0.1 F
C009 0.01 F
C008 0.01 F
C007 0.01 F
C006 0.01 F
C020 0.1 F
C019 0.1 F
C040 0.01 B
R036 0
C024 0.01 B
L001 10μH
C025 0.01 B
C021 0.01
C023 0.01 F
R006 10k
R005 10k
R002 1k
R003 1k
R004 1k
R026 1800
R038 4700
R025 1800
R037 4700
R027 27k
R028 39k
Q002 XN4601
R019 1k
R017 3900
R018 1k
R021 1k
R022 1k
Q003 2SC4081
R016 12k
C029 68p SL
C030 100p SL
C031 18p SL
R024 10k
R039 3900
R041 1500
R009 1k
R015 1k
R011 1k
R012 1k
Q005 2SC4081
Q004 XN4601
R040 12k
C026 68p SL
C027 100p
C028 18p SL
R014 10k
C039 47p SL
R031 8200
R029 22k
R030 3900
R032 18k

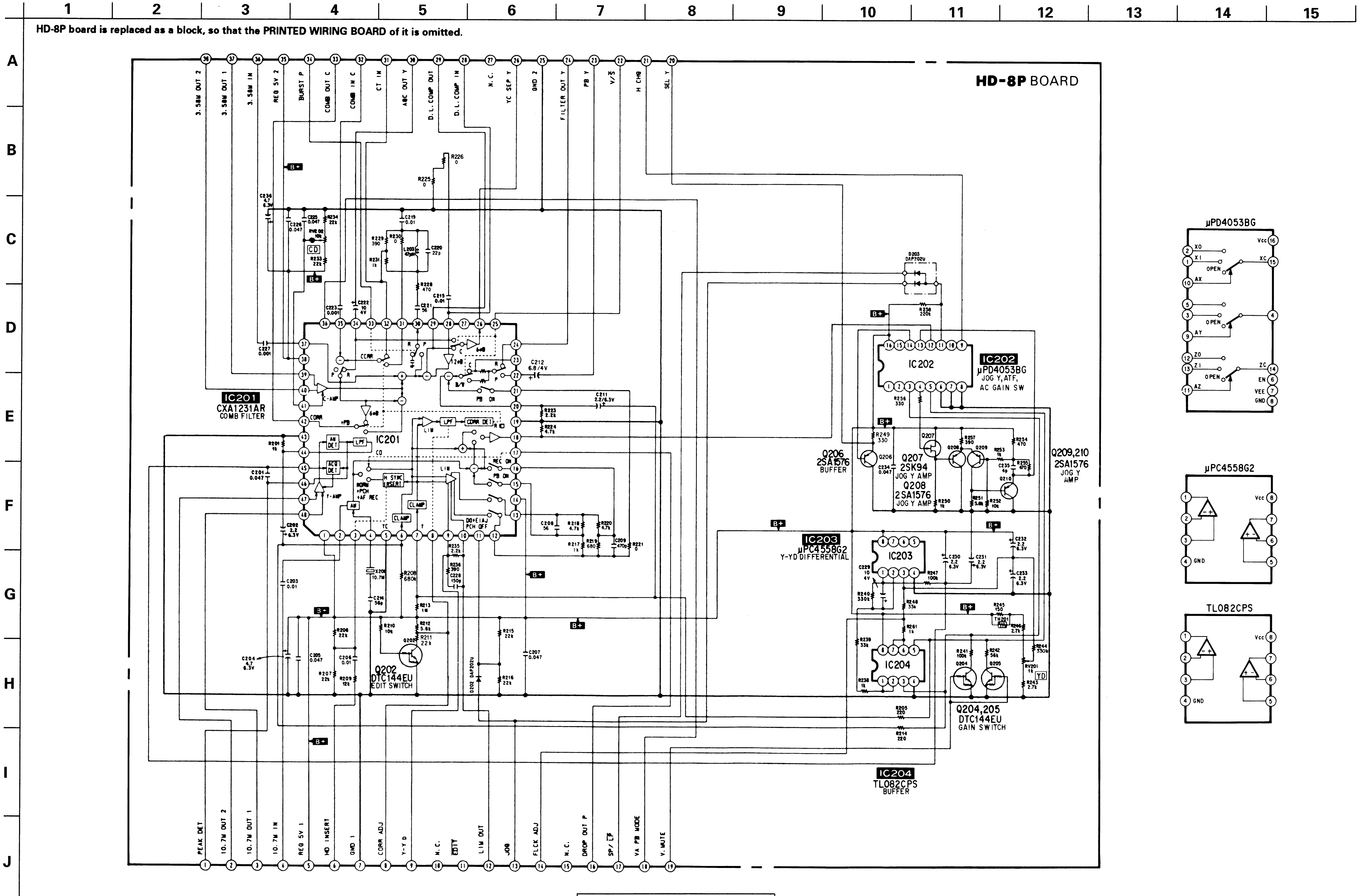
HR-3P (REC/PB AMP) SCHEMATIC DIAGRAMS

HR-3P board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.


HR-3P BOARD
CH2 BIAS
RP 5V
CH2 CHECK
CH2 (Y)
CH2 (X)
GND
GND
CH1 (X)
CH1 (Y)
CH1 CHECK
REG 5V
CH1 BIAS
L005 10μH
B+
Q003
2SC2223
FEEDBACK DUMPING
Q002
2SC2223
FEEDBACK DUMPING
L007 100μH
L002 150μH
L001 22μH
R010 47k
C039 7p
C036 150p
R032 10 (1/16W)
R030 22k (1/16W)
C043 10 6.3V
C038 0.047
C037 33p
R033 180
C035 0.01
R031 10k
C013 0.047
C012 0.22
C010 0.1
C009 22 6.3V
C007 0.1
C005 0.22
C003 0.047
C006 22 6.3V
D002 1SS196
D001 1SS196
R009 39k
R008 39k (1/16W)
C011 0.01
C008 0.01
R007 39k (1/16W)
R006 39k
R003 22k
C001 0.01
R002 10k
R001 47k
C034 7p
R026 22k (1/16W)
C030 0.01
R028 10 (1/16W)
C031 150p
C042 10/6.3V
R027 10k
R029 180
C032 33p
C033 0.047
R013 1800
R011 10k
C015 0.01
R012 22k
C041 10p
C016 0.01
R014 1800
R005 1800
C002 0.01
R004 1800
C040 10p
R022 22k
R023 33k
C028 0.047
C027 1/16V
R020 2.2k
C025 0.01
R025 22k
R024 33k
R021 2.2k
C017 0.01
L004 100μH
C018 1/16V
C019 0.01
R018 10k
O.C
REC
REC AMP VCC
E.F
REC Amp GND
Head Amp GND
H. AMP Vcc
O.C
C/D
C/D
E.F
H Imp
REC AMP2
H AMP2
43dB
43dB
H AMP1
REC AMP1
E.F
H Imp
H Imp
ATF VOL
2 ND RF AMP2
2 ND RF AMP1
10dB
REF
BUFF
BUFF
BUFF
BUFF
PB GND
REC GND
SW2
SW1
SW
SW
PCM
VIDEO
AMP
AMP
500
BUFF
EF
EF
PCM VOL
IC001
CONTROL LOGIC
6dB ATT
SW B/W
Y VOL
C VOL
Y IN
RF SWP
C IN
PBS
PCM OUT
PCM REC
ACK JOG
EF
PB VCC
EF
IC001
CXA1234AR
REC/PB AMP
Q001
DTC144EU
SWITCH
C020 0.01
C021 0.01
C044 0.01
R019 47k
C022 1 16V
C023 10 6.3V
C024 0.01
REC PCM RF
CH2 Z
HCHG
REC VI RF
REG GND
RF SWP
RP PB MODE
PB PCM RF
REC AREA
RF IN
PB RF
AF REC
RF CH2
RF CH1
PB VI RF
CH1 Z

HD-8P (COMB FILTER) SCHEMATIC DIAGRAMS

HD-8P board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
HD-8P BOARD
3.58M OUT 2
3.58M OUT 1
3.58M IN
REG 5V 2
BURST P
COMB OUT C
COMB IN C
CT IN
ABC OUT Y
D.L.COMP OUT
D.L.COMP IN
N.C.
YC SEP Y
GND 2
FILTER OUT Y
PB Y
V/S̄
H CHG
SEL Y
PEAK DET
10.7M OUT 2
10.7M OUT 1
10.7M IN
REG 5V 1
HD INSERT
GND 1
CORR ADJ
Y-YD
N.C.
EDIT
LIM OUT
JOG
FLCK ADJ
N.C.
DROP OUT P
SP/LP
VA PB MODE
V.MUTE
IC201
CXA1231AR
COMB FILTER
IC202
μPD4053BG
JOG Y, ATF, AC GAIN SW
IC203
μPC4558G2
Y-YD DIFFERENTIAL
IC204
TL082CPS
BUFFER
Q202
DTC144EU
EDIT SWITCH
Q204,205
DTC144EU
GAIN SWITCH
Q206
2SA1576
BUFFER
Q207
2SK94
JOG Y AMP
Q208
2SA1576
JOG Y AMP
Q209,210
2SA1576
JOG Y AMP
D203
DAP202U
D202 DAP202U
X201 10.7M
L203 47μH
RV202 10k
RV201 1k
TH201
CD
YD
B+
C-AMP
Y-AMP
CORR
AM DET
ACC DET
LPF
LIM
CORR DET
H SYNC INSERT
CLAMP
AM
NORM +PCH +AF REC
DO+EIAJ PCH OFF
REC
PB ON
REC ON
6dB
12dB
CO
YC
μPD4053BG
X0
X1
AX
Y0
Y1
AY
Z0
Z1
AZ
XC
YC
ZC
OPEN
Vcc
EN
VEE
GND
μPC4558G2
TL082CPS
Vcc
GND